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# CALCULATIONS OF THE FIELD NEAR THE APEX OF A WEDGE SURFACE

JAMES R. WAIT AND CAROLEN M. JACKSON

U. S. DEPARTMENT OF COMMERCE
NATIONAL BUREAU OF STANDARDS

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# CALCULATIONS OF THE FIELD NEAR THE APEX OF A WEDGE SURFACE

James R. Wait and Carolen M. Jackson

Using the exact series solution for diffraction by a perfectly conducting wedge, numerical results are presented for the structure of the field in the apex region. This provides insight to the nature of electromagnetic fields near a surface discontinuity. Furthermore, the results provide some justification for the use of approximate boundary conditions which have been used previously in studying radio propagation over terrain features.

## 1. Introduction

In the bulk of theoretical radio propagation studies, the earth's surface is assumed to be smooth. Unfortunately, it is known from experience that the roughness plays an important role in determining the characteristics of the field. A general mathematical treatment of general unevenness of the surface does not seem to be possible because of the difficulty of rigorously satisfying the boundary conditions. However, if the surface is gently sloping and/or at long wavelengths, some simplifying approximations may be made. It is the principal purpose of the present paper to investigate the validity of these simplifications.

Considerable success has been achieved by Feinberg [1946] in his introduction of approximate boundary conditions for solving rough surface problems. His idea is to transfer the exact boundary conditions on the actual surface to a plane reference surface which may or may not be the mean surface. An example of such a problem would be the calculation of the field in the neighborhood of a sloping beach at a coast line. While the land and the sea may often be idealized as flat horizontal surfaces, the transition region will tend to distort the electric field lines with a subsequent modification of the transmitted wave. Furthermore, a reflected wave will be produced which may be significant in the operation of radio navigational systems.

In order to establish the validity of the approximate boundary conditions which have been used for sloping surfaces, it is desirable to adopt a very simple model which has an exact solution. The wedge is such a model. It consists of two intersecting plane surfaces which are semi-infinite in extent. A wedge in the limiting case where the open angle is $2\pi$ is often called a knife edge. The exact solution for the diffracted field in this case may be expressed conveniently in terms of Fresnel integrals. The knife edge model has been used extensively in the study of diffraction by mountainous obstacles and other pronounced relief features. However, in the case of coastal relief and other low lying features, the knife edge is an inadequate model and instead the general wedge is more meaningful. For example, a beach with a linear slope can be regarded as the superposition of two wedges.

The model is illustrated in figure 1. The wedge of assumed perfect conductivity is defined by the surfaces $\phi = 0$ and $\phi = \psi$ with reference to a cylindrical coordinate system $(\rho, \phi, z)$. A plane wave is incident from the direction $\phi = \phi_o$ as indicated in figure 1. The field is to be observed at $P(\rho, \phi, z)$ where $\phi$ is in the range 0 to $\psi$. For simplicity, the direction of propagation is taken to be perpendicular to the wedge apex. Also, the incident wave of unit strength is polarized so that the magnetic field has only a $z$ component. The exact expression for the resultant magnetic field, which also has only a $z$ component, is given by [Wait, 1959],

$$H_z = \frac{\pi}{\psi} \sum_{m=0,1,2,\ldots}^{\infty} \epsilon_m \cos \nu\phi \cos \nu\phi_o \exp(i\nu\pi/2) J_\nu(k\rho), \qquad (1)$$

where $\nu = m\pi/\psi$, $\varepsilon_o = 1$, $\varepsilon_m = 2$ for $m \neq 0$. In this formula, $J_\nu(k\rho)$ is the Bessel function of order $\nu$ and argument $k\rho$ where $k = 2\pi/\text{wavelength}$.

Series formulas of the kind given by (1) are often considered to be unuseable because of poor convergence. For this reason, they are often replaced by asymptotic forms which are particularly useful when $k\rho$ is a large parameter and $\psi$ is somewhat greater than $180^o$. When $\psi = 180^o$ or when $\psi$ is any submultiple of $\pi$, the series formula given above may be transformed into a summation from a finite number of image waves. This matter has been discussed in some detail in a previous publication [Wait, 1959].

In the present situation, the wedge is taken to have an angle near $180^o$, corresponding to a small change of slope of the surface. Also, we are interested in the behavior of the field at all distances from the apex and, consequently, the parameter $k\rho$ may be either small or large compared with unity. For these reasons, it was considered worthwhile to program the infinite series solution despite its poor convergence and other complexities.

The expression for the $H_z$ field [denoted H Z] is normalized so that $H_z = \exp(+ik\rho)$ if $\phi = \phi_o = 0$ while $H_z = \exp(-ik\rho)$ if $\phi_o = 0$ and $\phi = 180^o$. This would follow from the identity

$$\sum_{m = 0, 1, 2, \ldots}^{\infty} \varepsilon_m \exp(im\pi/2)\, J_m(k\rho) = \exp(ik\rho) \quad , \qquad (2)$$

which involves only integral-order Bessel functions.

For the present problem, the electric field has both a $\rho$ and an $\phi$ component. From Maxwell's equations

$$E_\rho = \frac{1}{i \varepsilon_o \omega \rho} \frac{\partial H_z}{\partial \phi} \quad \text{and} \quad E_\phi = -\frac{1}{i \varepsilon_o \omega} \frac{\partial H_z}{\partial \rho} , \tag{3}$$

where $\varepsilon_o = 8.854 \times 10^{-12}$ is the dielectric constant of free space. Thus,

$$EO = -\frac{i \varepsilon_o \omega E_\phi}{k} = \frac{\pi}{\psi} \sum_{m=0,1,2,\ldots}^{\infty} \varepsilon_m \cos \nu\phi \cos \nu\phi_o \exp(i\nu\pi/2) J'_\nu(k\rho) , \tag{4}$$

where $J'_\nu(Z) = \frac{d}{dZ} J_\nu(Z)$ ,

$$EP = \frac{i \varepsilon_o \omega E_\rho}{k} = \frac{\pi}{\psi} \sum_{m=1,2,3,\ldots}^{\infty} 2\nu \sin \nu\phi \cos \nu\phi_o \exp(i\nu\pi/2) \frac{J_\nu(k\rho)}{(k\rho)} . \tag{5}$$

The letter symbols HZ, EO, and EP are used to designate the quantities $H_z$, $-i E_\phi/\eta_o$, and $i E_\rho/\eta_o$, respectively, where $\eta_o = \varepsilon_o \omega/k = 120\pi$. Also, in the subsequent numerical listings, the dimensionless parameter $k\rho$ is designated by X.

For the numerical work, three cases (designated I, II, III) are considered. They are:

I $\quad \phi_o = 0, \quad \phi = 0$ ,

II $\quad \phi_o = 0, \quad \phi = 180^o$,

III $\quad \phi_o = 0, \quad \phi = \psi$ .

In all these cases, $X$ (or $k\rho$) ranges from $10^{-3}$ to 50. In case I and case III, $\psi - 180^{0}$ takes the values $0, \pm 5^{o}, \pm 10^{o}, \pm 20^{o}, \pm 30^{o}$. In case II, $\psi - 180^{o}$ takes only the positive values $0, + 5^{o}, + 10^{o}, + 20^{o}, + 30^{o}$, because the plane $\phi = 180^{o}$ is inaccessible if $\psi < 180^{o}$.

The totality of the numerical results are listed in the appendix where both Cartesian and polar representations are given. As an interesting check, the infinite series was used in cases I and II for $\psi = 180^{o}$. As indicated in the tabulated results, the magnitude of the normalized fields is unity to better than four-digit accuracy. The phase is also equal to $\pm k\rho \pm 2q\pi$, where $q$ is an integer, to within the same accuracy. To achieve this accuracy at the large values of $k\rho$ (or $X$), approximately 200 terms in the series were required.

2. Graphical Presentation, Case I.

To illustrate the behavior of the reflected fields in the vicinity of the wedge, the amplitude of $H_z$ and $E_\phi/\eta_o$ is plotted as a function of $k\rho$ in figures 2a, 2b, 2c, and 2d for values of $\psi$ ranging from $150^{o}$ to $210^{o}$ and $\phi = \phi_o = 0^{o}$. It is evident that a standing wave pattern is formed which has a characteristic period of $\pi$ radians or 1/2 wavelength. As is evident from figures 2b and 2d, the $|H_z|$ and the $|E_\phi/\eta_o|$ fields have almost an identical pattern except within 1/2 radian (or 1/6 wavelength) from the apex. Within the immediate neighborhood of the apex, the characteristics of the magnetic and electric fields are quite different, as illustrated in figures 2a and 2c. In particular, the $|H_z|$ field is finite at $k\rho = 0$. In fact, as may be ascertained from the series solution, $H_z \cong (\pi/\psi)$ as $k\rho$ tends to zero. On the other hand, the $E_\phi$ field for $\psi > 180^{o}$ has a singular behavior as $k\rho$ tends to zero. In fact, $E_\phi$ varies

according to $(k\rho)^{\frac{\pi}{\psi}-1}$ as $k\rho \to 0$. If $\psi > 180^\circ$, the field rises quite sharply right at the apex. This is analogous to an electrostatic fringing effect which occurs in potential fields near sharp edges. On the other hand, if $\psi < 180^\circ$, the $E_\phi$ field vanishes at the edge.

Another interesting feature of the curves in figures 2a, 2b, 2c, and 2d is the non-symmetry of the fields about $\psi = 180^\circ$. For example, in figure 2b, it is seen that the reflected wave for $\psi = 150^\circ$ is somewhat greater than the case for $\psi = 210^\circ$. For small departures of $\psi$ from $180^\circ$, this non-symmetry disappears. In fact, the curve for $\psi = 175^\circ$ is almost symmetrical with the curve for $\psi = 185^\circ$.

### 3. Graphical Presentation, Case II

In figures 3a, 3b, 3c, 3d, 3e, and 3f, the amplitude of the field components $H_z$, $E_\phi$, and $E_\rho$ is plotted for the plane $\phi = 180^\circ$ for $\psi = 180^\circ$, $185^\circ$, $190^\circ$, $200^\circ$, and $210^\circ$. As before, $\phi_o = 0^\circ$. Here the observer is <u>above</u> the wedge surface at $\phi = \psi$. As may be seen from figures 3a and 3b, the $|H_z|$ field diminishes with distance from the apex. The decrease is more pronounced for the large values of $\psi$. Actually, the asymptotic limit of all these curves (for $\psi > 180^\circ$ and $k\rho \to \infty$) is 0.5. The curves for $|E_\phi/\eta_o|$ in figures 3c and 3d show a very similar behavior; the only major difference is the expected singular behavior near the apex. The singular effect is evident in the curves for $|E_\rho/\eta_o|$ given in figures 3e and 3f.

### 4. Graphical Presentation, Case III

In figures 4a, 4b, 4c, and 4d, the amplitude of the fields $H_z$ and $E_\phi$ are plotted for the plane $\phi = \psi$ for $\psi$ from $150^\circ$ to $210^\circ$. Here, as in case I, the field $E_\rho$ is identically zero. These curves

for the case $\psi > 180^{o}$ clearly show the shadowing effect of the wedge. On the other hand, if $\psi < 180^{o}$, the fields are magnified somewhat because of the upward tilt of the surface $\phi = \psi$. For all values of $\psi$, the $H_z$ field is finite at the apex where the $E_\phi$ field has the expected singular behavior.

## 5. Remarks Concerning Phase

The phase of the field for the three cases is available from the tabulated data in the appendix. It should be noted that phase is given in radians and is always listed in the range 0 to $2\pi$. Generally, the phase is rapidly varying because a rapidly varying factor of the type $\exp(\pm ik\rho)$ is included. In order to understand the behavior of the phase, one should subtract the rapidly varying portion. For example, in case I, a meaningful quantity is the phase increment of $H_z$ defined by

$$(\text{phase } H_z) - k\rho \ ,$$

Thus, if there were no reflection from the apex (e.g., $\psi = 180^{o}$), the field $H_z$ at $\phi = 0$ would be equal to $\exp(ik\rho)$. Phase results which are normalized as indicated are illustrated in figures 5a, 5b, 5c, and 5d for $\phi_o = 0$ and $\phi = 0$. As expected, the phase of $H_z$ at the apex is zero, but for larger values of $k\rho$, an oscillatory pattern is evident. The phase curves for $E_\phi$ are quite similar except that the phase is finite at the apex.

## 6. Effective Surface Impedance

In approximate theoretical treatments of wave propagation over undulating surfaces, the boundary conditions are often applied to some reference plane just above the actual surface. In this context,

it is of interest to plot the exact value of the wave impedance normal to the surface $\phi = 180^\circ$ when $\psi > 180^\circ$. Thus, in figures 6a and 6b, the normalized impedance $|E_\rho / \eta_o H_z|$ is plotted as a function of $k\rho$. Clearly, in the limiting case, $\psi = 180^\circ$, the impedance must be zero as indicated. However, as $\psi$ is increased beyond $180^\circ$, it is evident that the impedance is finite and is approximately proportional to $180^\circ - \psi$. The simplified boundary condition proposed by Feinberg [1946] and applied by Wait and Jackson [1963] is equivalent to using

$$\frac{E_\rho}{\eta_o H_z} = \frac{\psi - 180^\circ}{57.3^\circ} .$$

For example, if $\psi = 190^\circ$, the normalized impedance is 0.174, which is in fair agreement with the curves in figure 6a, except very near the apex, if $k\rho < 3$. If $\psi = 185^\circ$, the agreement is somewhat better and the upper limit of $k\rho$ stretches out to about 6.

Although the simple approximate boundary condition is not valid for the large values of $k\rho$, it may be used for certain approximate field calculations. An illustrative example is shown in figures 7a and 7b where the reflected field at $\phi = 0$ is shown as calculated by both exact and approximate methods. The approximate method would assume that the boundary condition given by the equation holds on $\phi = 180^\circ$ for all values of $k\rho$. Using a method discussed in a previous paper [Wait and Jackson, 1963], the reflected field would be given by

$$E_\phi^{(r)} \cong \frac{1}{2}\left(\frac{\psi - 180^\circ}{57.3^\circ}\right) g(x) \quad \text{where} \quad x = k\rho ,$$

and

$$g(x) = x e^{-ix}\left[H_o^{(2)}(x) + i H_1^{(2)}(x)\right] - i e^{-ix} H_o^{(2)}(x) .$$

In this expression, $H_o^{(2)}$ and $H_1^{(2)}$ are the Hankel functions of the second kind of order zero and one, respectively. The corresponding exact expression for $E_\phi^{(r)}$, on the plane $\phi = 0$, is obtained by subtracting the incident field $\eta_o^{-1} \exp(ik\rho)$ from the expression for the total field given by (4). In this way, we may write

$$E_\phi^{(r)} = \frac{1}{2}\left(\frac{\psi - 180^o}{57.3^o}\right) g^+(x) \quad \text{for} \quad \psi > 180^o \ ,$$

and

$$E_\phi^{(r)} = -\frac{1}{2}\left(\frac{180^o - \psi}{57.3^o}\right) g^-(x) \quad \text{for} \quad \psi < 180^o \ ,$$

where $g^+(x)$ and $g^-(x)$ are derived from the exact series expressions.

The comparative results of $g(x)$ and $g^\pm(x)$ are shown in figures 7a, 7b, 7c, and 7d in an Argand-type plot for $\psi = 185^o$, $190^o$, $175^o$, and $170^o$, respectively. It is evident that despite the violation of the assumed boundary conditions in the approximate approach, $g(x)$ is reasonably close to the exact results obtained from $g^\pm(x)$. Physically, this may be attributed to the importance of the region of the reference boundary near the apex. Contributions from the reference boundary far from the apex must tend to cancel one another. It is noted that the curves for $\psi = 185^o$ and $175^o$ show a very close similarity between the approximate and exact forms. As the departures of $\psi$ from $180^o$ become greater, the dissimilarities between exact and approximate results become quite noticeable.

## 7. Concluding Remarks

This detailed numerical study gives some justification for the use of approximate conditions for gently sloping surfaces. In addition, the detailed description of the field near the apex of a wedge has now been made available. The stated purpose of the paper has thus been accomplished.

## 8. References


Feinberg, E. (1946). On the propagation of radio waves along an imperfect surface, J. Phys. USSR 10, 410-440.

Wait, J. R. (1959). Electromagnetic radiation from cylindrical structures (Pergamon Press, Oxford).

Wait, J. R., and C. M. Jackson (Nov.-Dec. 1963). The oblique propagation of ground waves across a coast line - Part II, J. Res. NBS 67D (in press).

## Figure Captions

Figure 1 — Illustrating incident plane wave on perfectly conducting wedge.

Figures 2a, 2b, 2c, 2d — Amplitude of $H_z$ and $E_\phi$ fields as a function of radian distance $k\rho$ from apex showing interference pattern between incident and reflected waves.

Figures 3a, 3b, 3c, 3d, 3e, 3f — Amplitude of $H_z$ and $E_\phi$ fields as a function of radian distance $k\rho$ from apex showing shadowing effect of wedge.

Figures 4a, 4b, 4c, 4d — Amplitude of $H_z$ and $E_\phi$ fields as a function of radian distance $k\rho$ for observer on wedge face $\phi = \psi$.

Figures 5a, 5b, 5c, 5d — Normalized phase of $H_z$ and $E_\phi$ fields as a function of radian distance $k\rho$ from apex showing interference pattern between incident and reflected wave.

Figures 6a, 6b — Normalized wave impedance on surface $\phi = \pi$.

Figures 7a, 7b, 7c, 7d — Argand plot of the reflected field, for various distances $k\rho$, as obtained from exact and approximate methods.

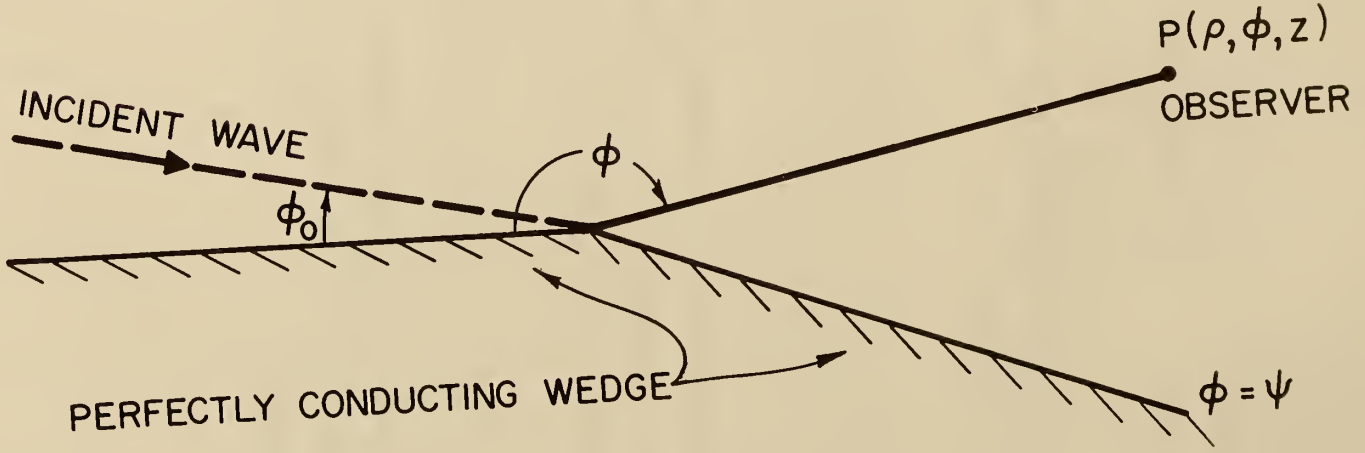
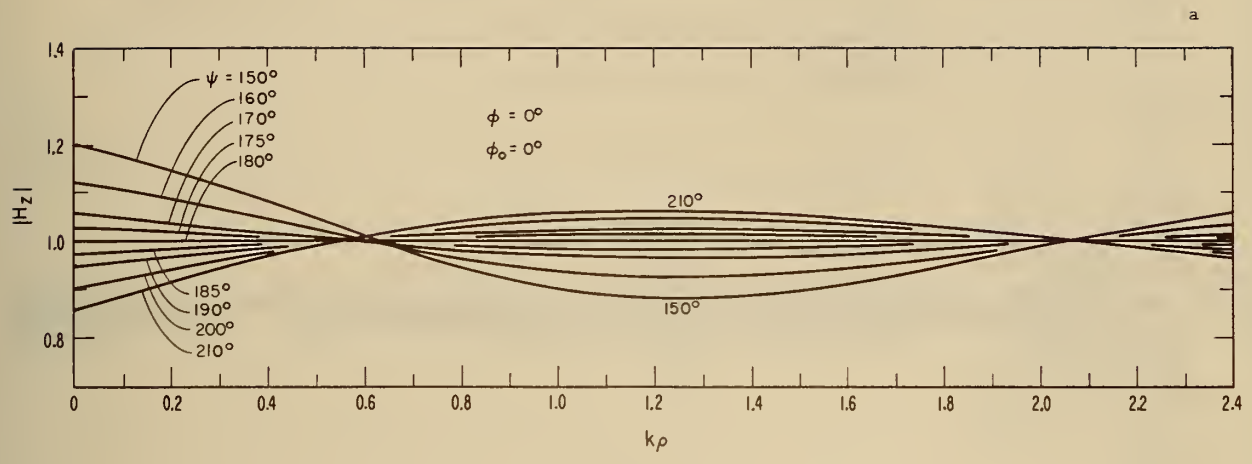
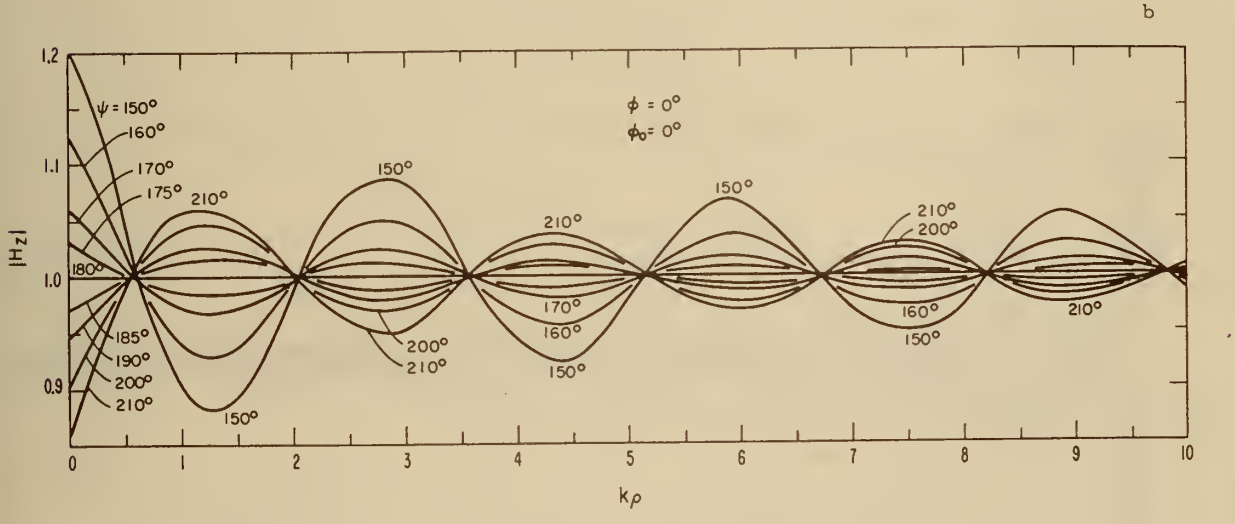
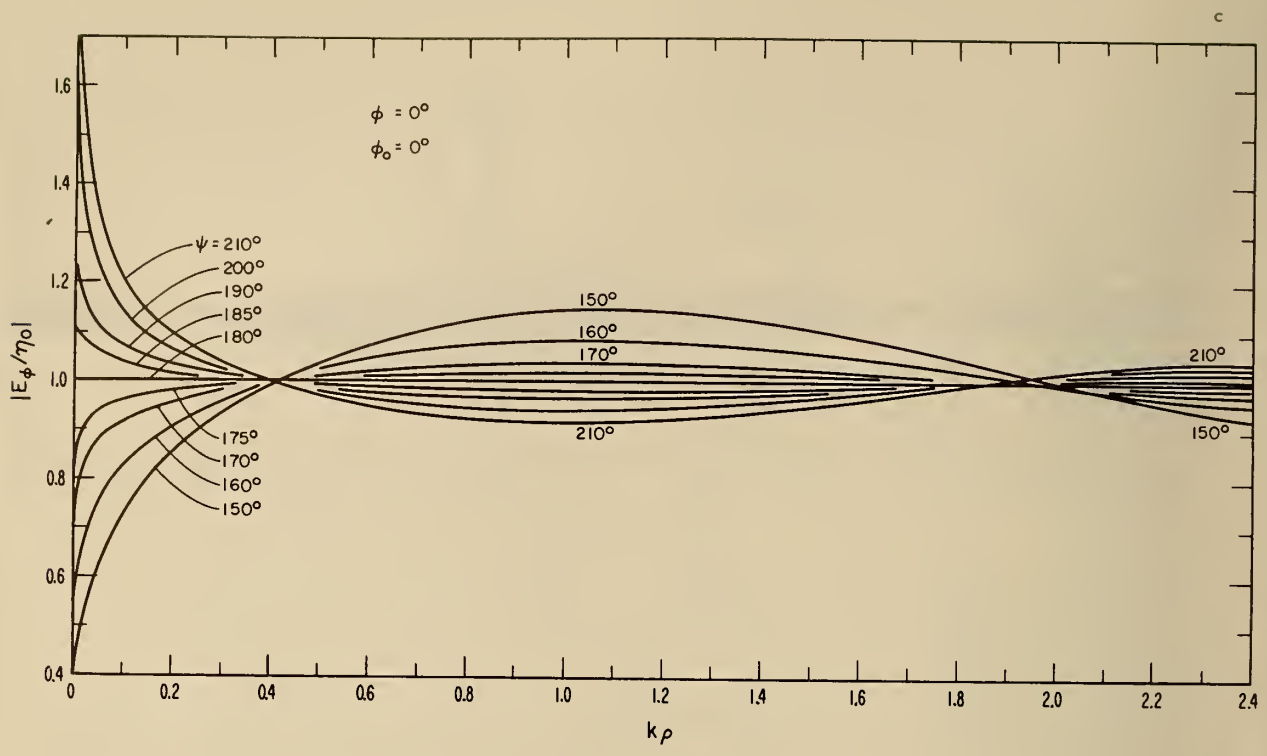


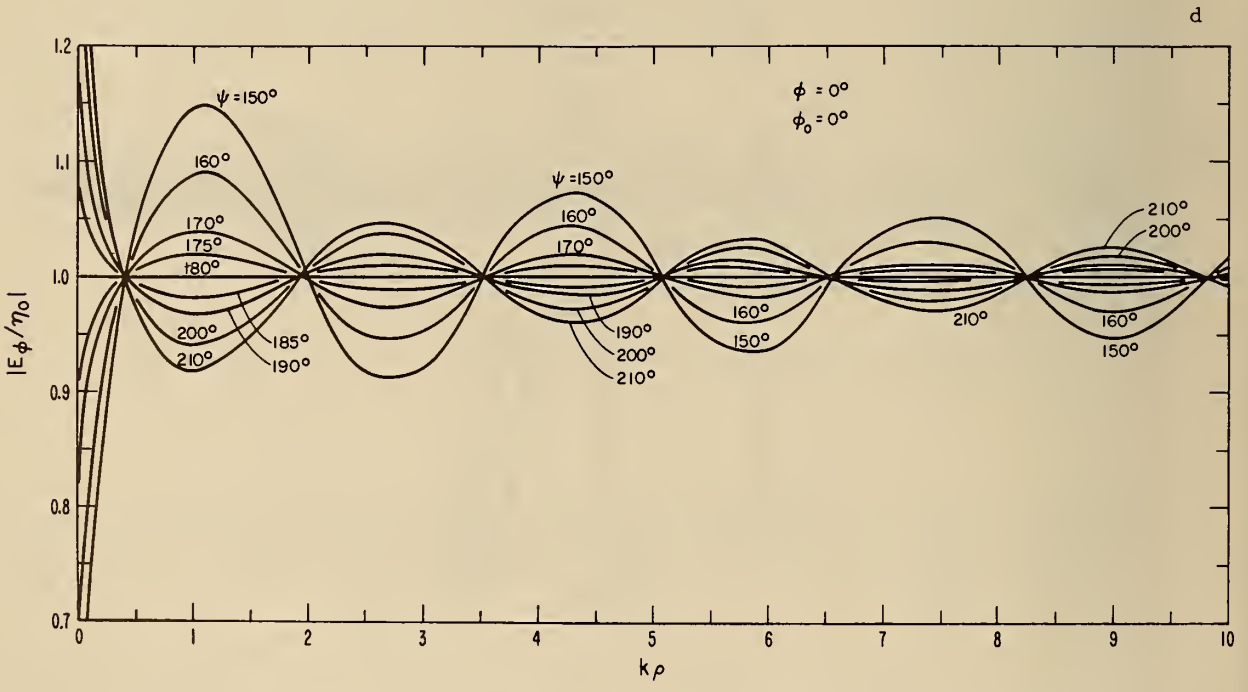

FIGURE 1 - ILLUSTRATING INCIDENT PLANE WAVE ON PERFECTLY CONDUCTING WEDGE



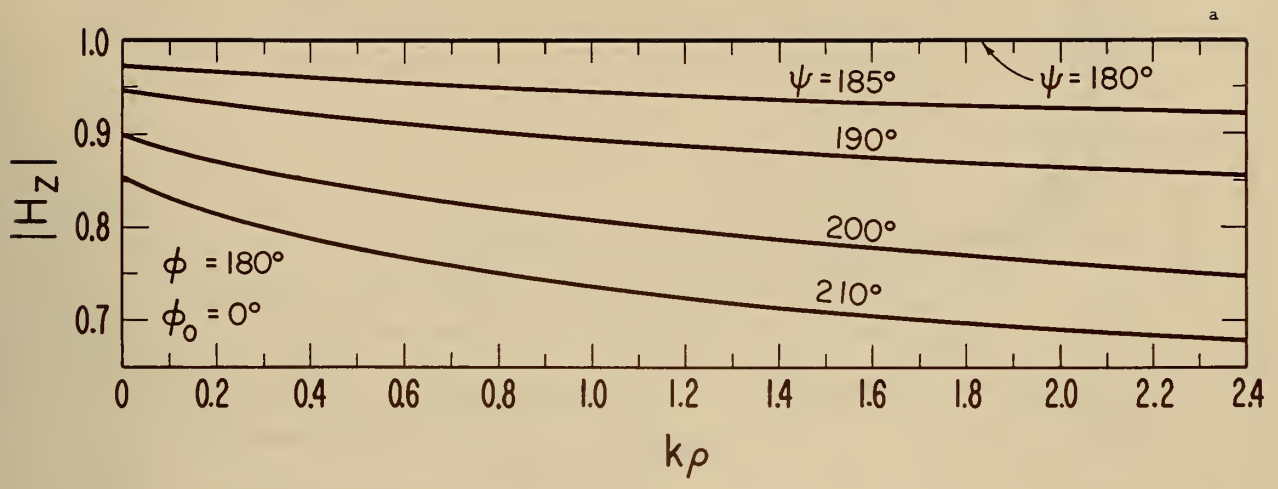



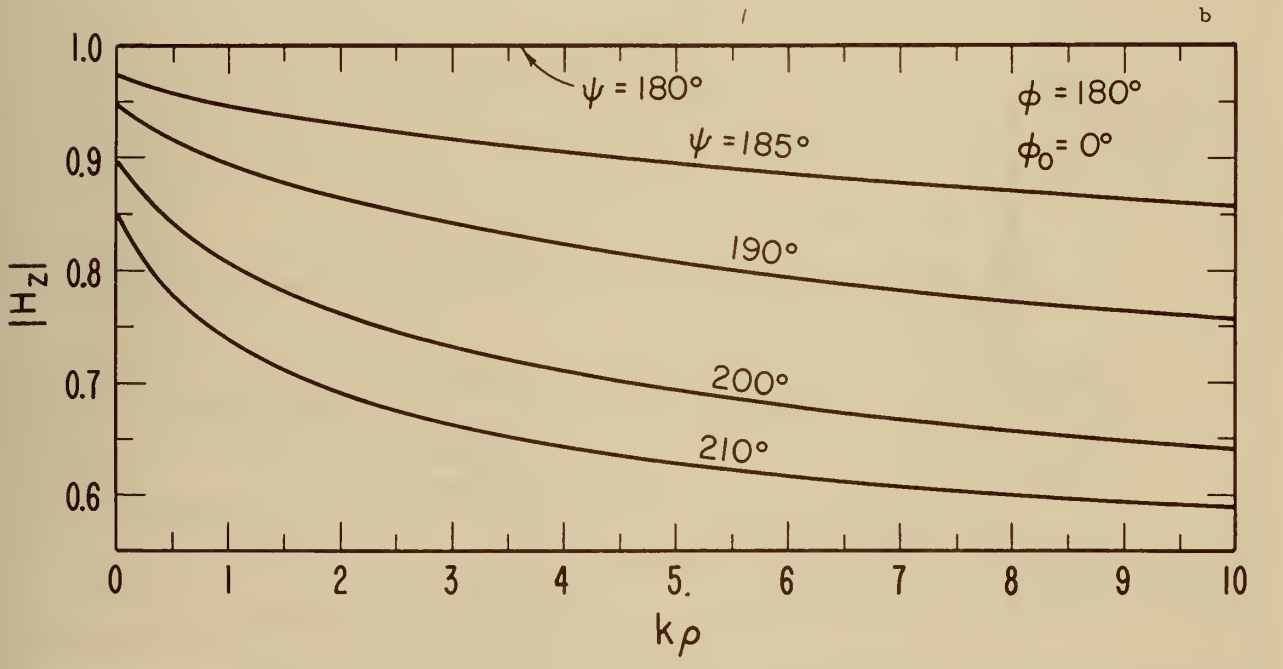

FIGURES 2a AND 2b - AMPLITUDE OF $H_z$ FIELD AS A FUNCTION OF RADIAN DISTANCE $k\rho$ FROM APEX SHOWING INTERFERENCE PATTERN BETWEEN INCIDENT AND REFLECTED WAVES



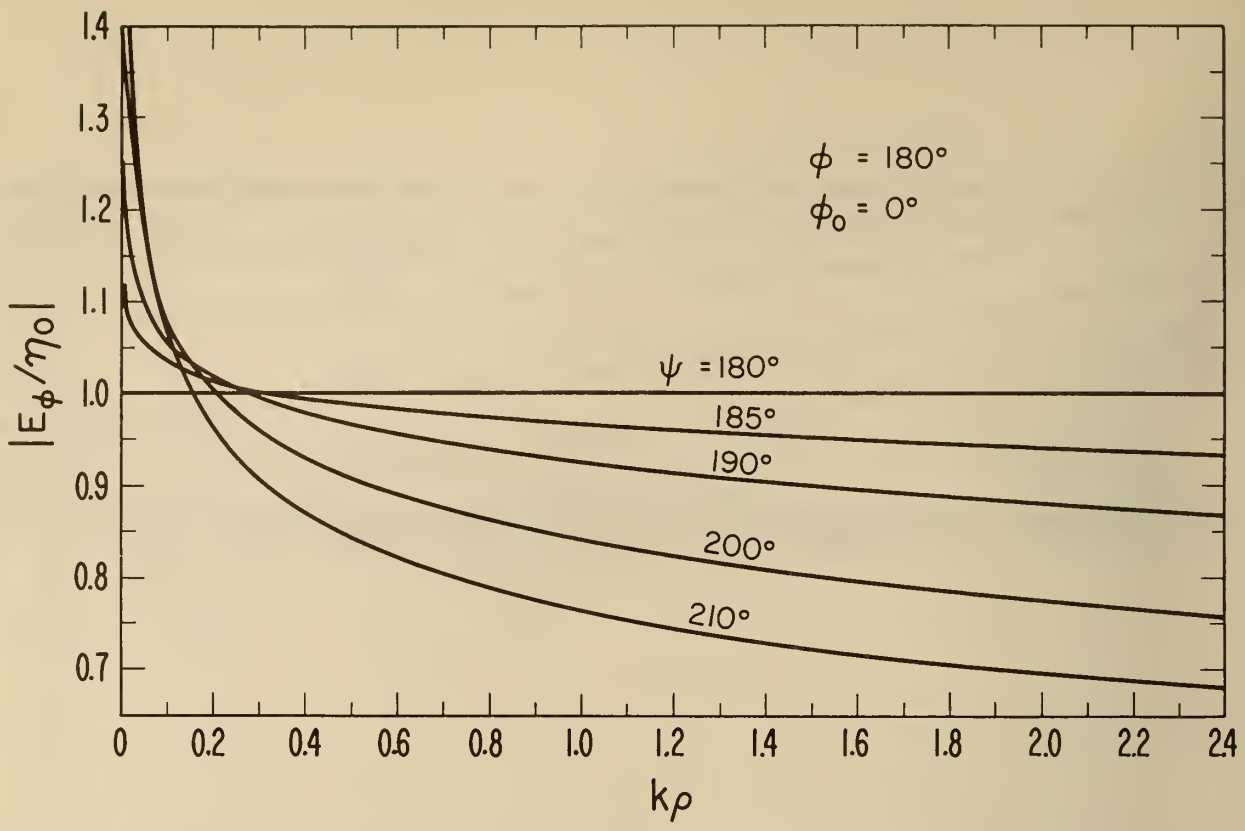




FIGURES 2c AND 2d - AMPLITUDE OF $E_\phi$ FIELD AS A FUNCTION OF RADIAN DISTANCE $k\rho$ FROM APEX SHOWING INTERFERENCE PATTERN BETWEEN INCIDENT AND REFLECTED WAVES

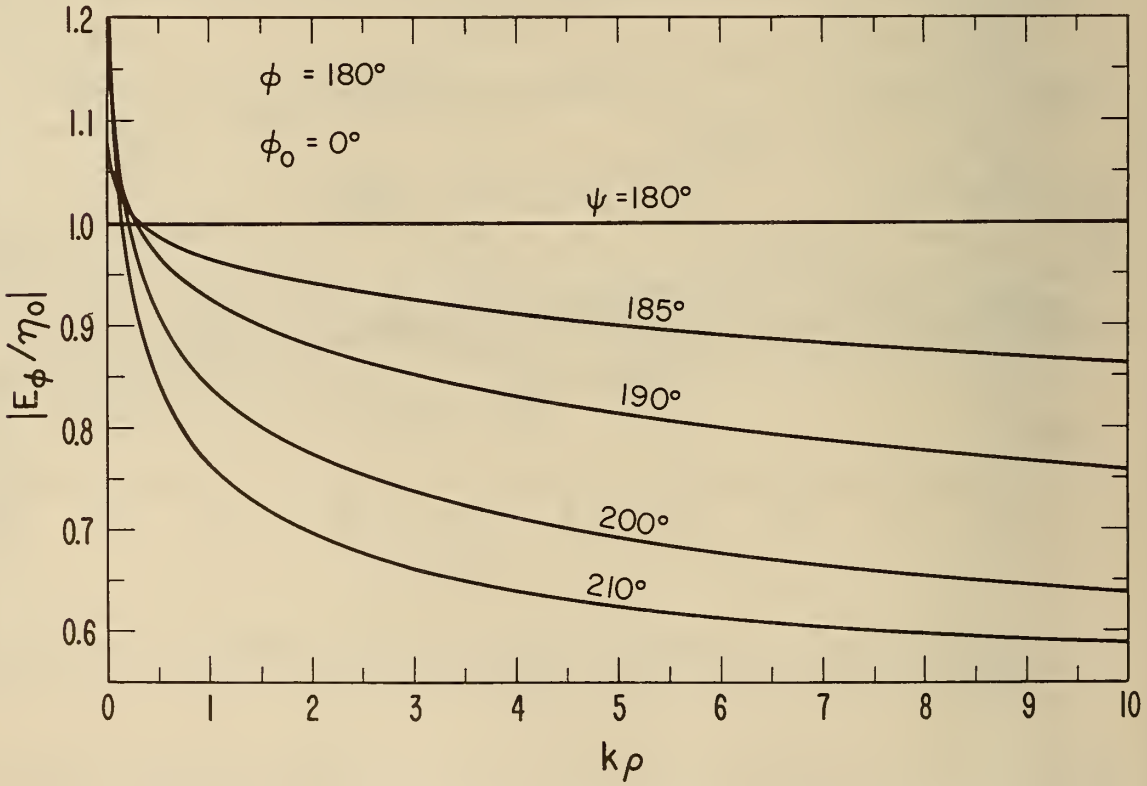



FIGURES 3a AND 3b - AMPLITUDE OF $H_z$ FIELD AS A FUNCTION OF RADIAN DISTANCE $k\rho$ FROM APEX SHOWING SHADOWING EFFECT OF WEDGE

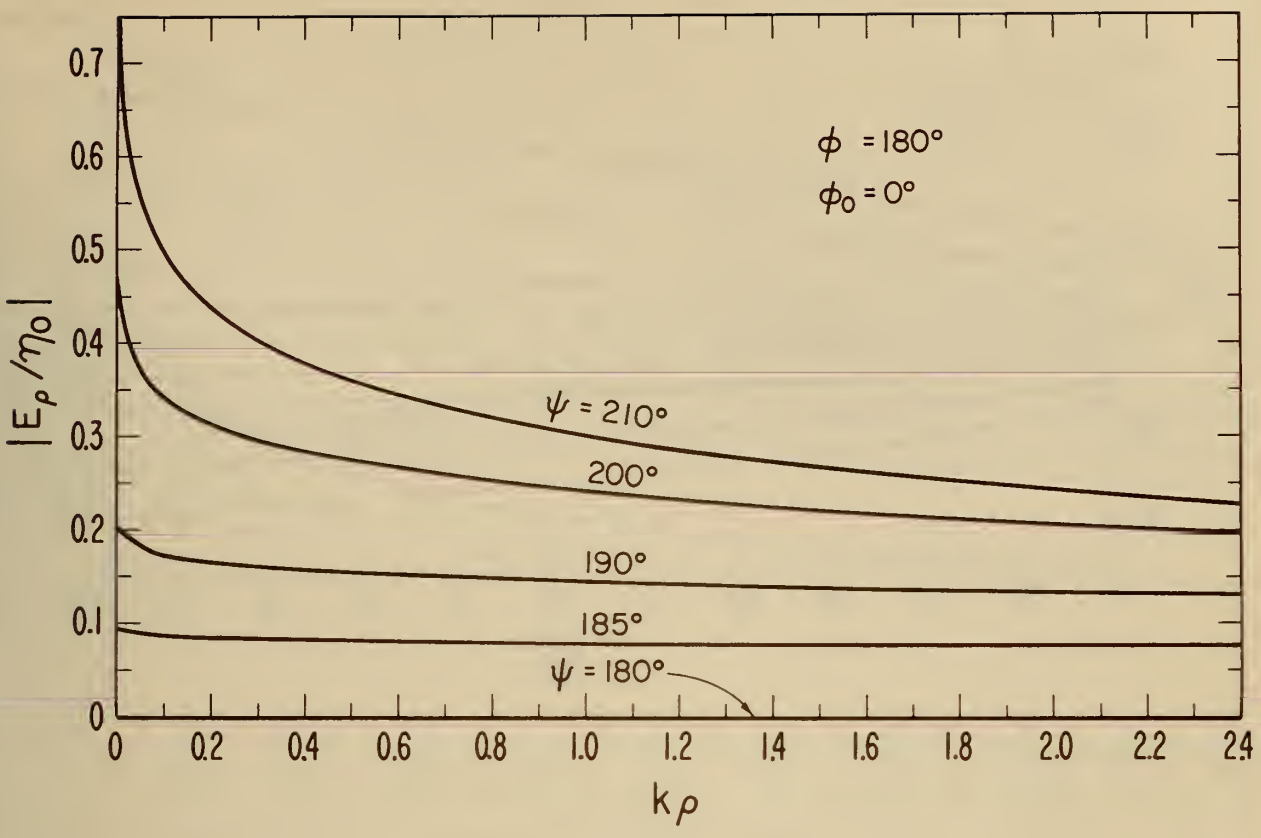



d

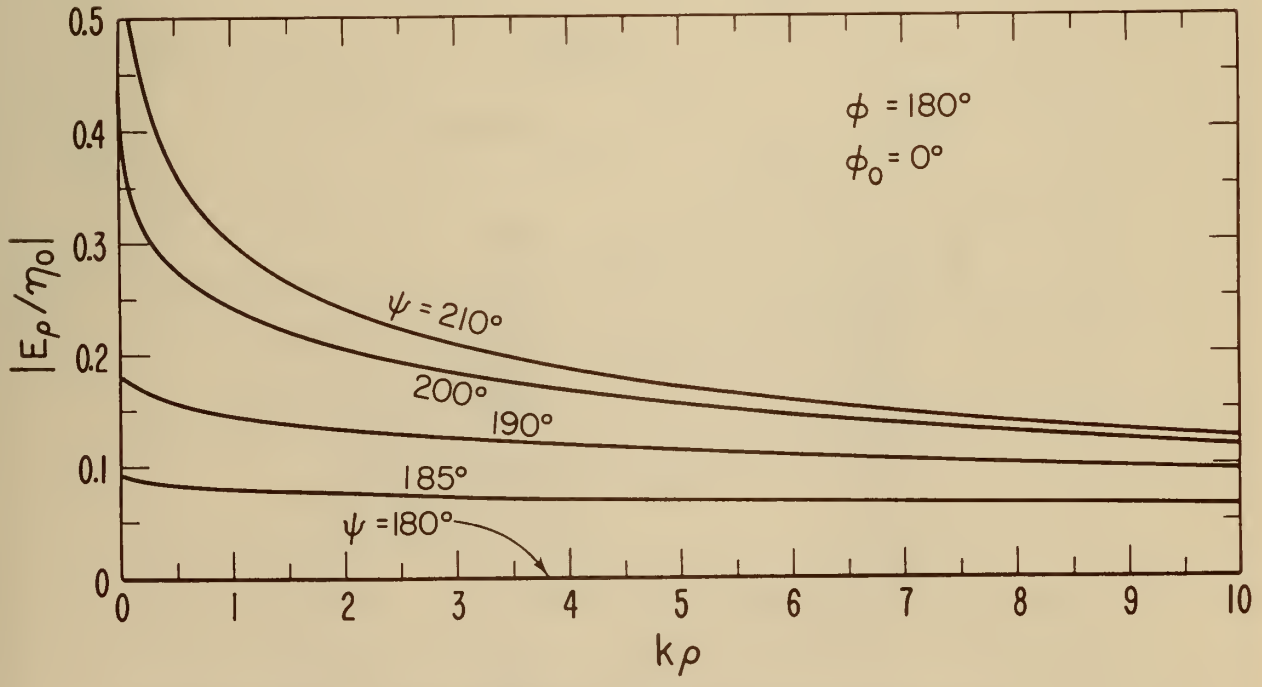



FIGURES 3c AND 3d - AMPLITUDE OF $E_\phi$ FIELD AS A FUNCTION OF RADIAN DISTANCE $k\rho$ FROM APEX SHOWING SHADOWING EFFECT OF WEDGE

e

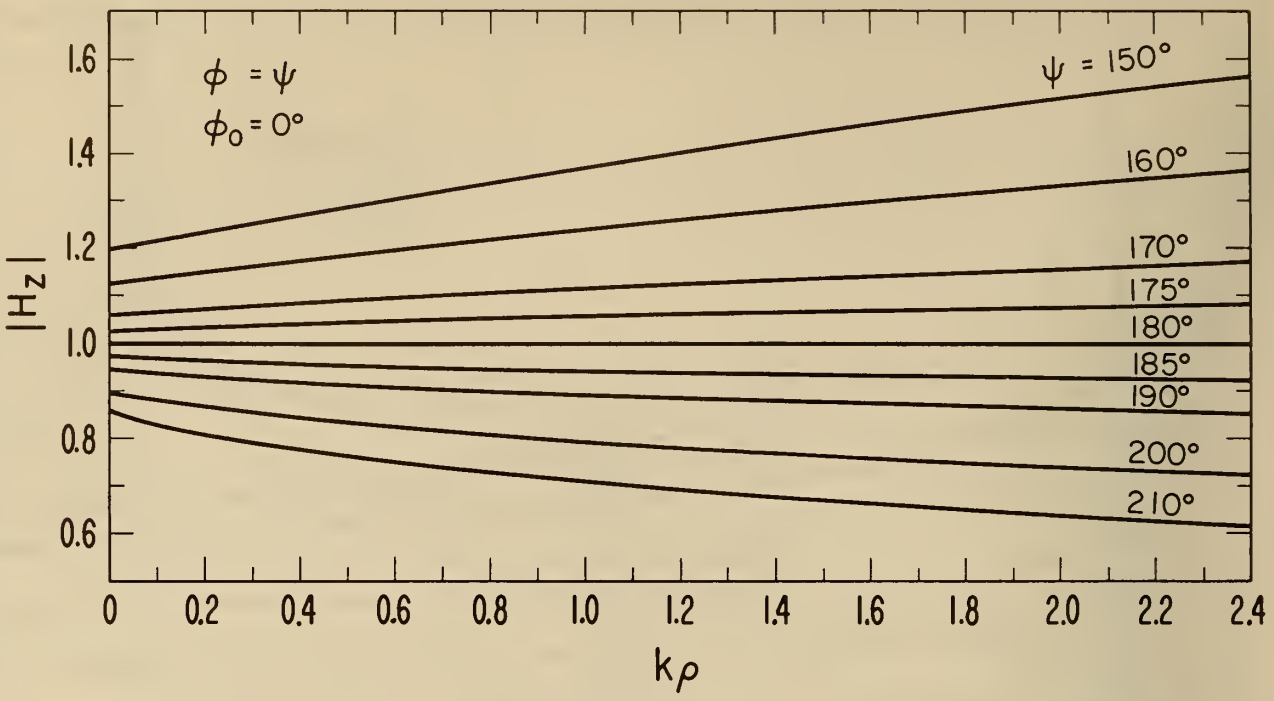



f




FIGURES 3e AND 3f - AMPLITUDE OF $E_\phi$ FIELD AS A FUNCTION OF RADIAN DISTANCE $k\rho$ FROM APEX, SHOWING SHADOWING EFFECT OF WEDGE

a

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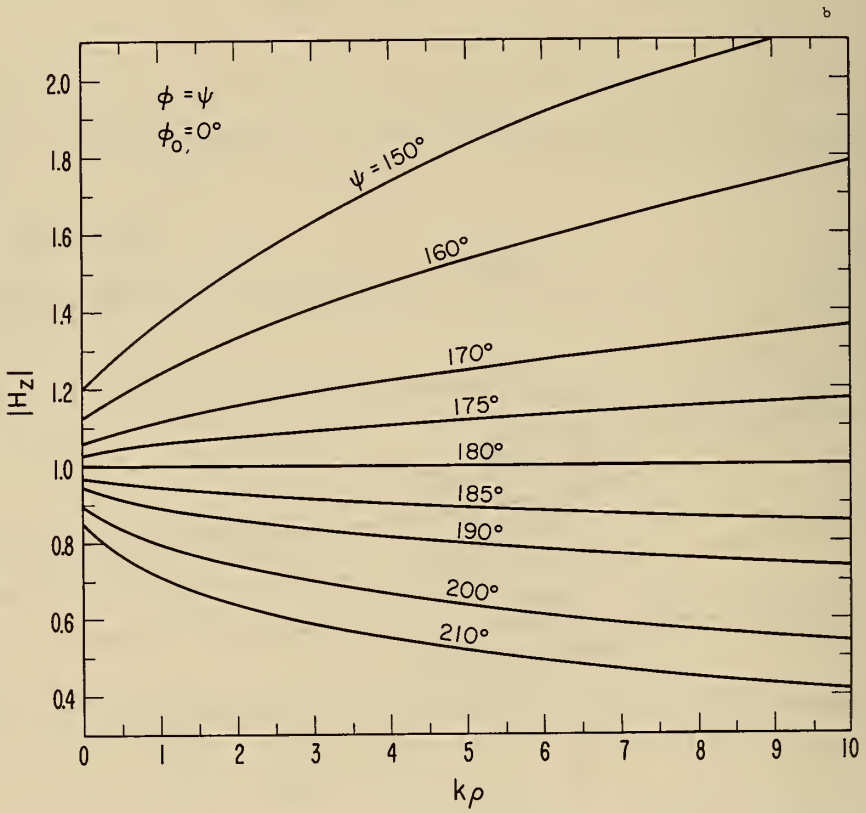
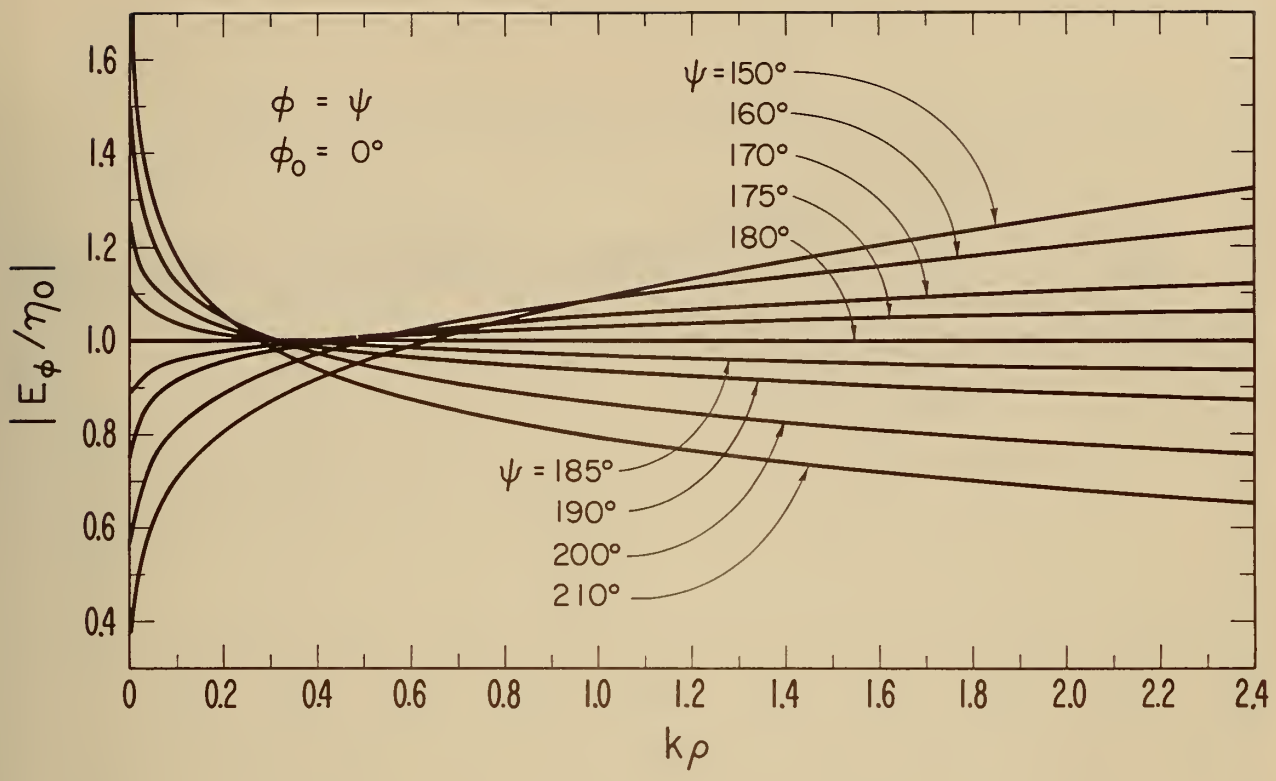
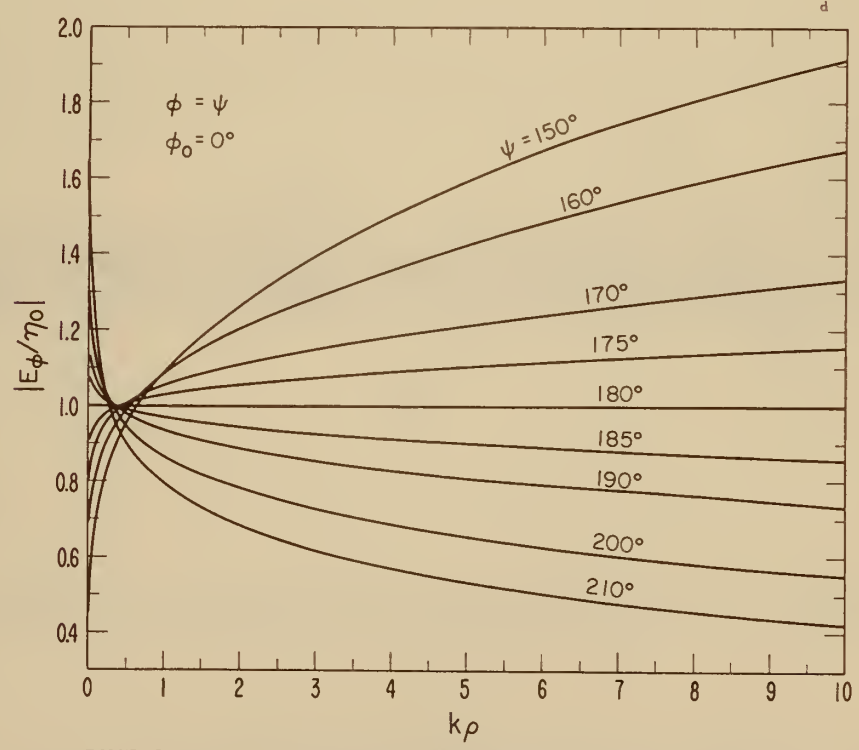



FIGURES 4a AND 4b - AMPLITUDE OF $H_z$ FIELD AS A FUNCTION OF RADIAN DISTANCE kρ FOR OBSERVER ON WEDGE FACE $\phi = \psi$

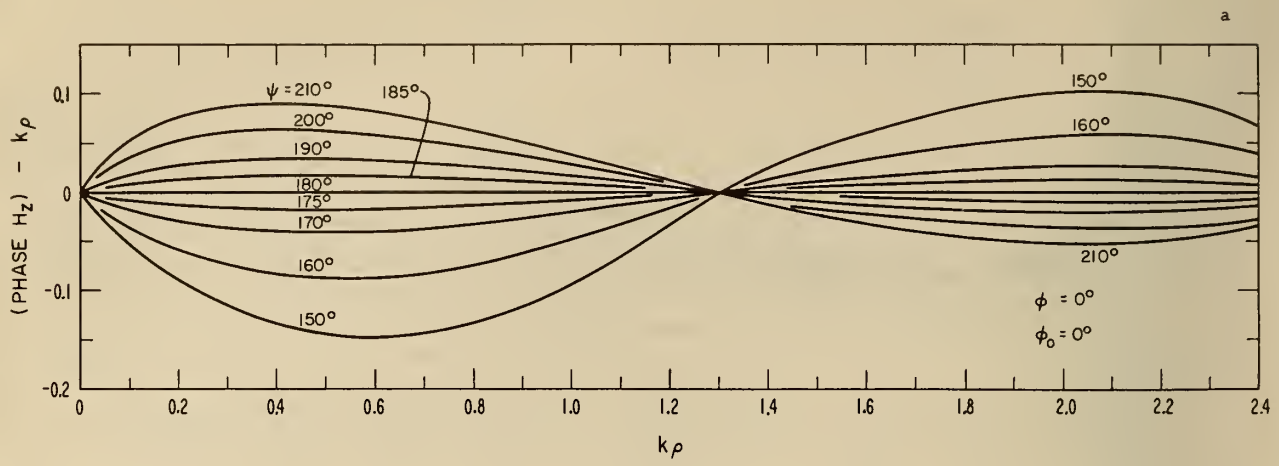
c

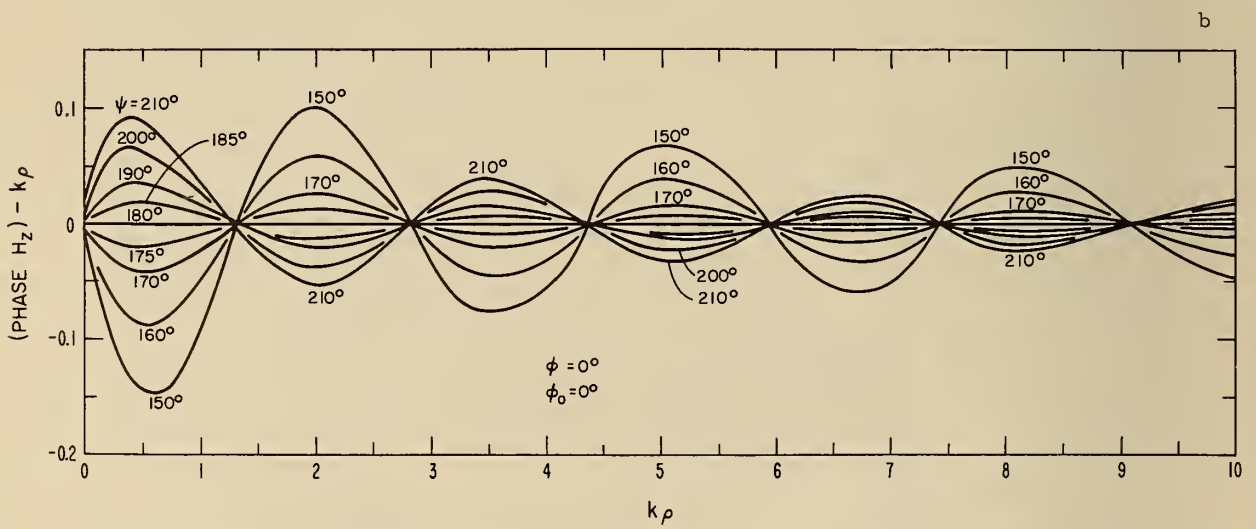



d



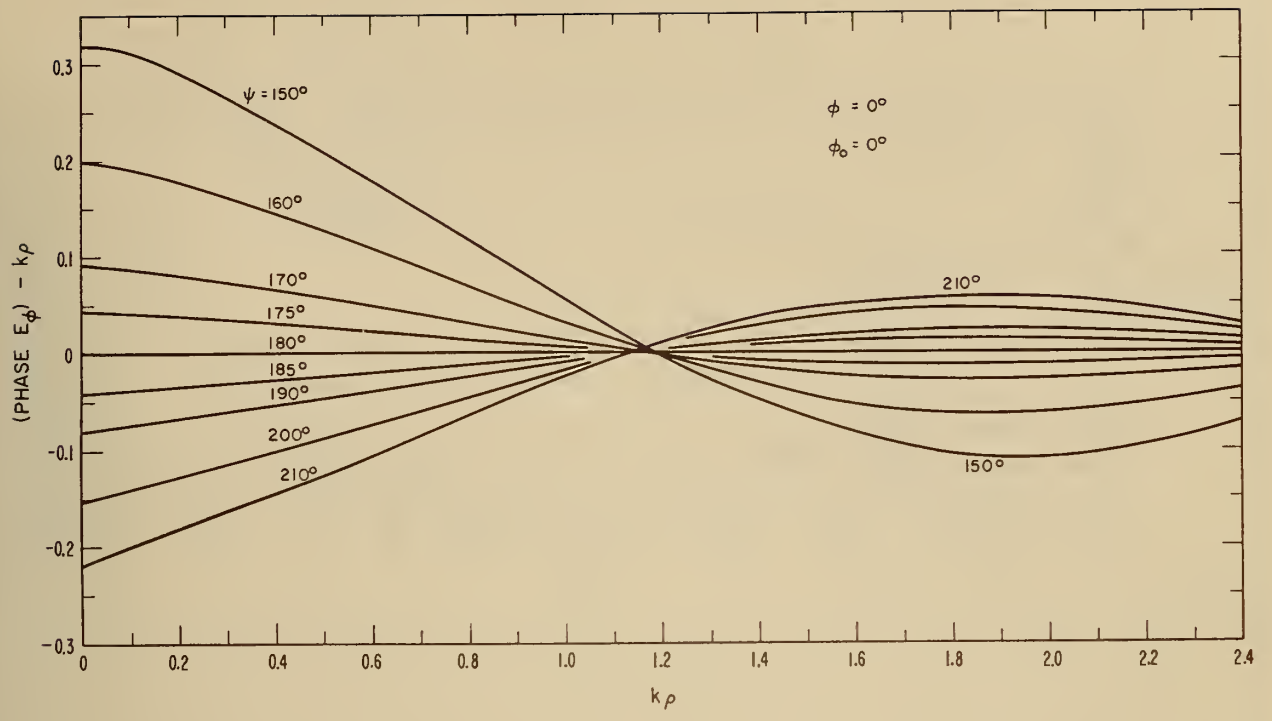

FIGURES 4c and 4d - AMPLITUDE OF $E_\phi$ FIELD AS A FUNCTION OF RADIAN DISTANCE $k\rho$ FOR OBSERVER ON WEDGE FACE $\phi = \psi$



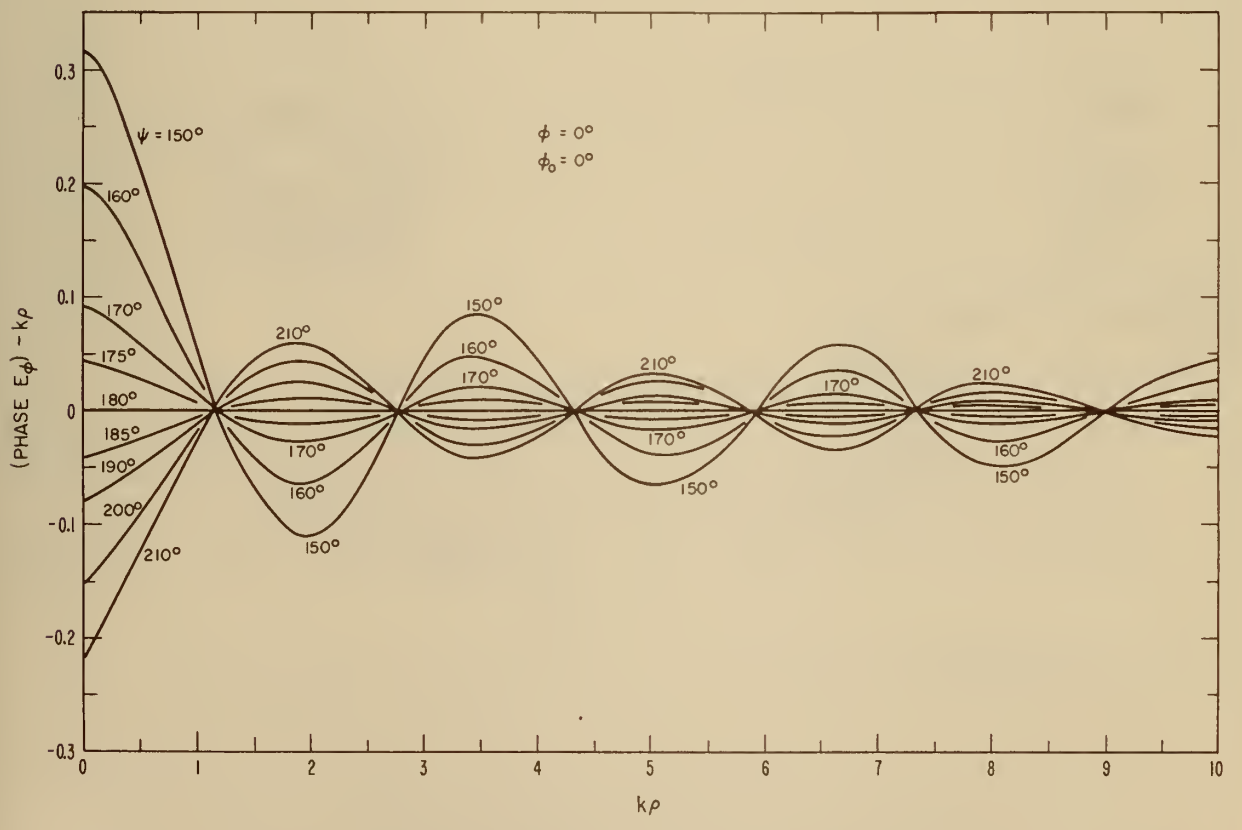




FIGURES 5a AND 5b - NORMALIZED PHASE OF $H_z$ FIELD AS A FUNCTION OF RADIAN DISTANCE $k\rho$ FROM APEX SHOWING INTERFERENCE PATTERN BETWEEN INCIDENT AND REFLECTED WAVES

c

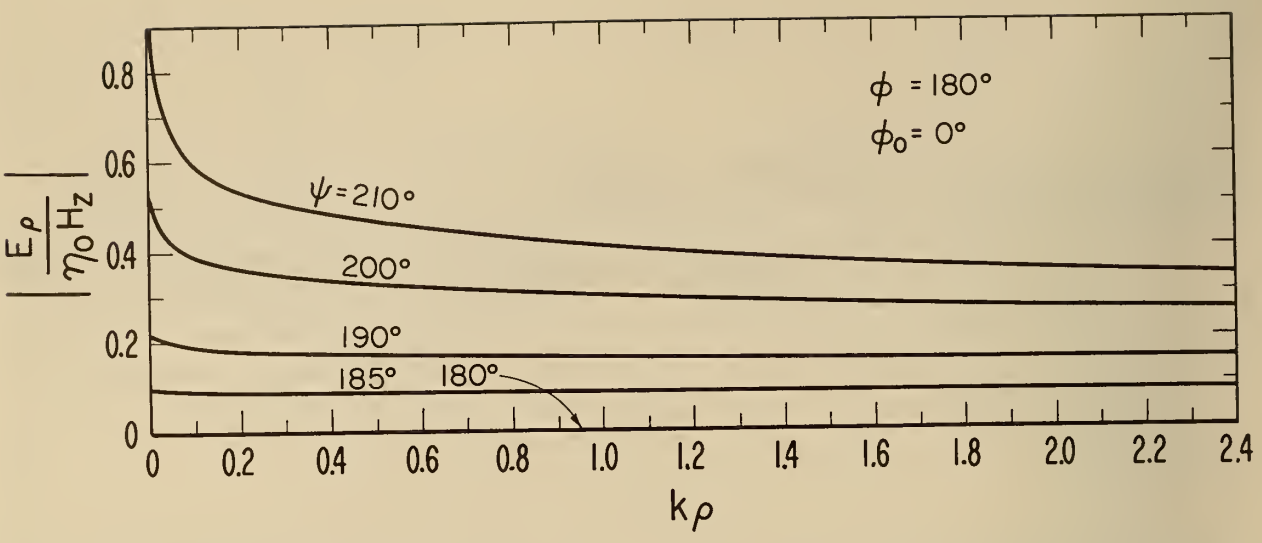



d

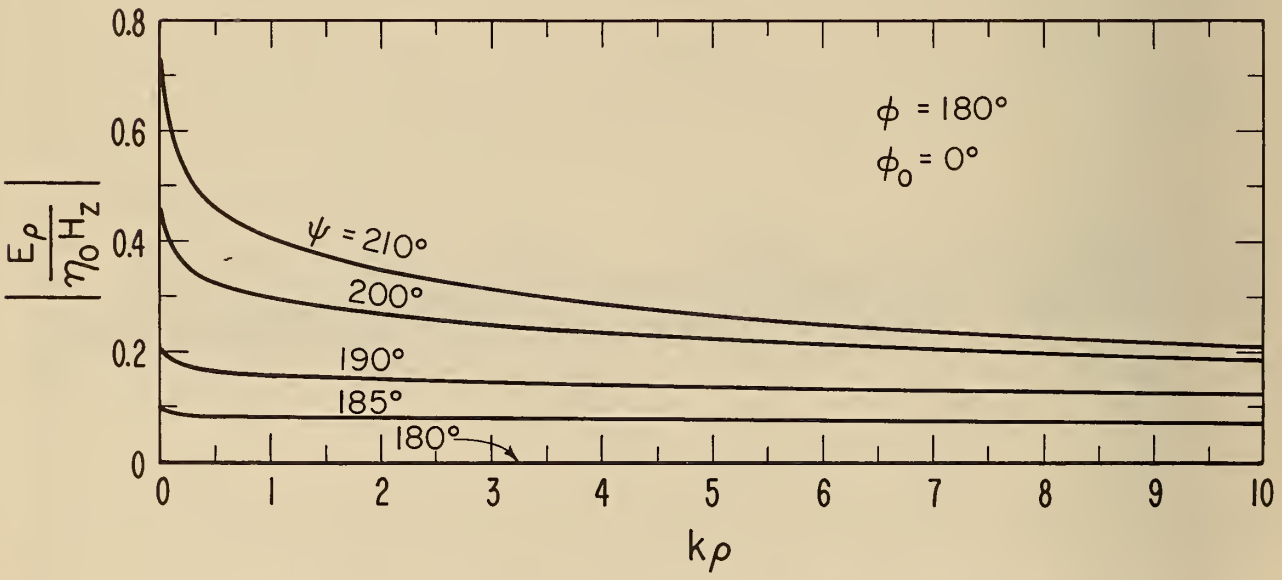



FIGURES 5c AND 5d - NORMALIZED PHASE OF $E_\phi$ FIELD AS A FUNCTION OF RADIAN DISTANCE $k\rho$ FROM APEX SHOWING INTERFERENCE PATTERN BETWEEN INCIDENT AND REFLECTED WAVES

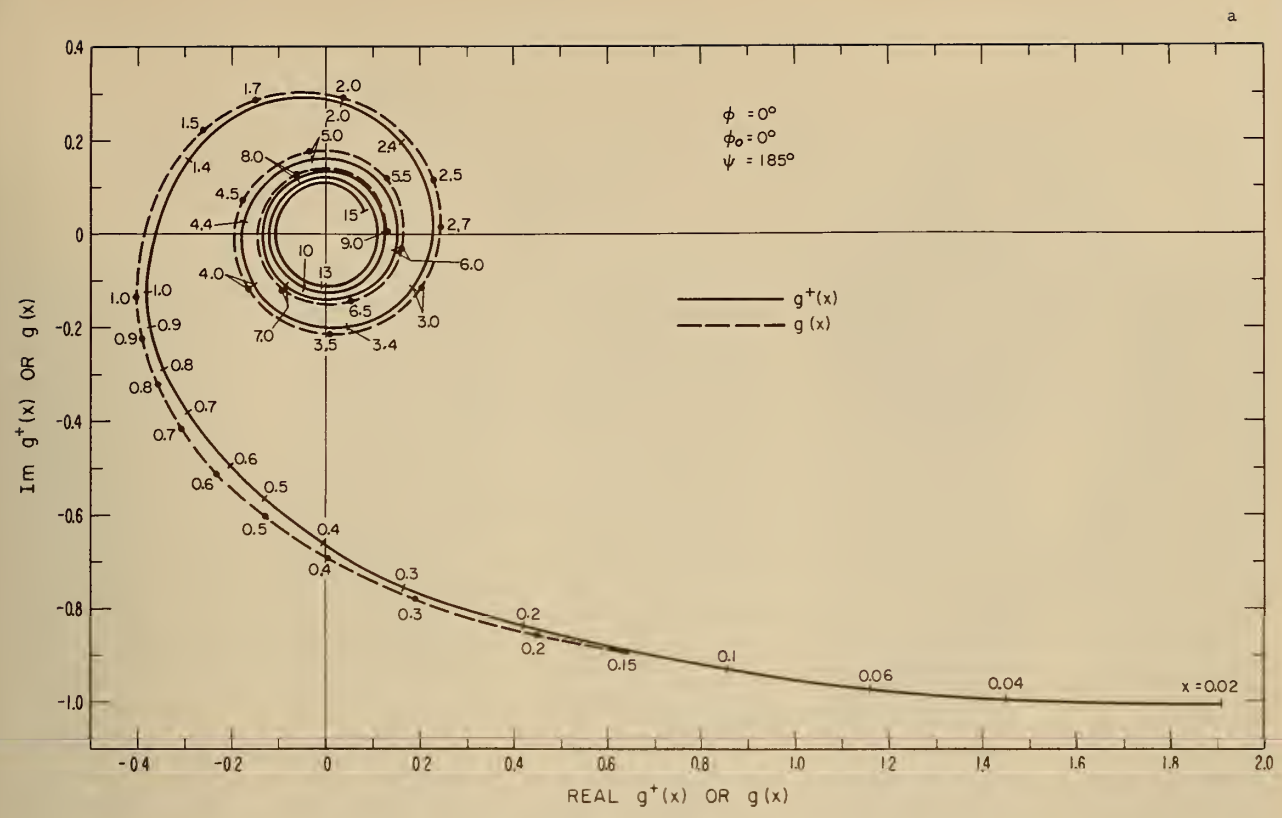
a

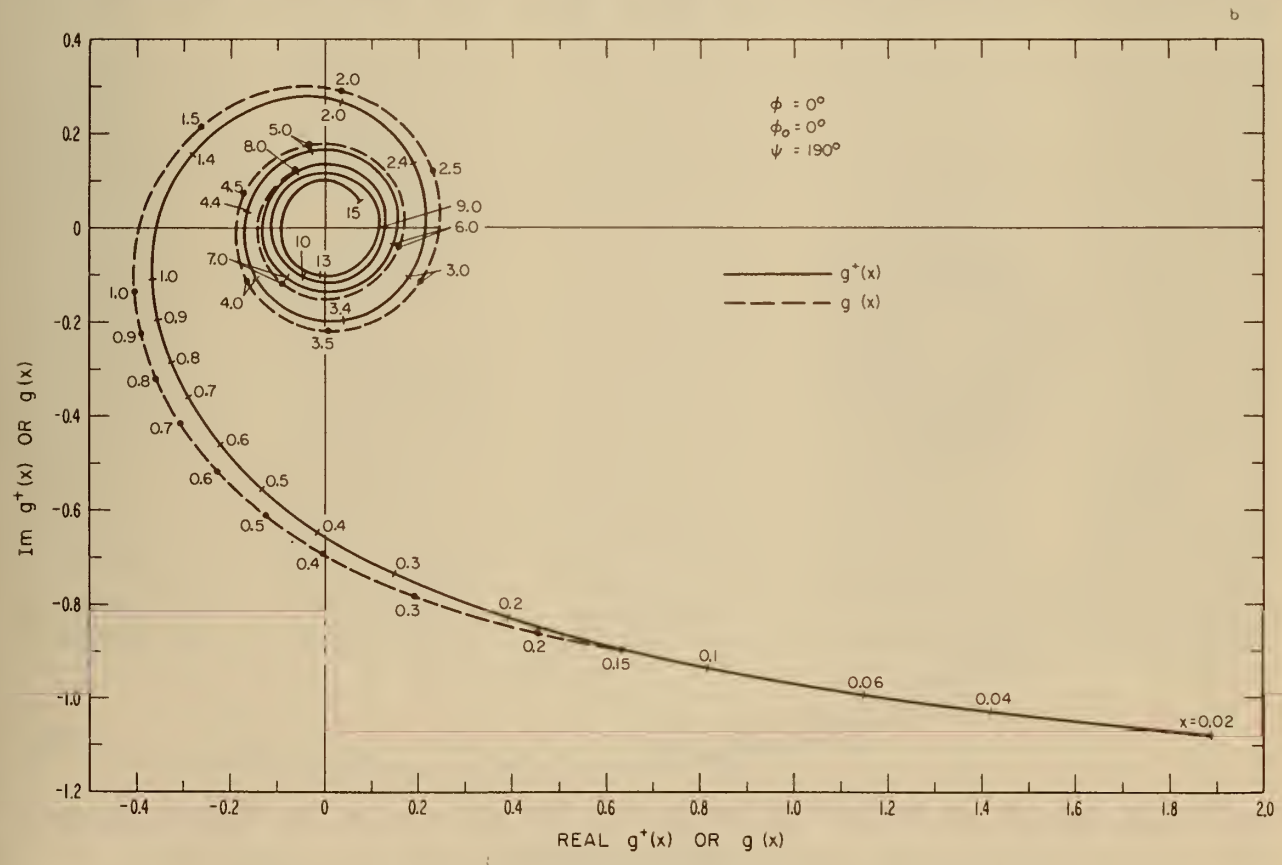



b



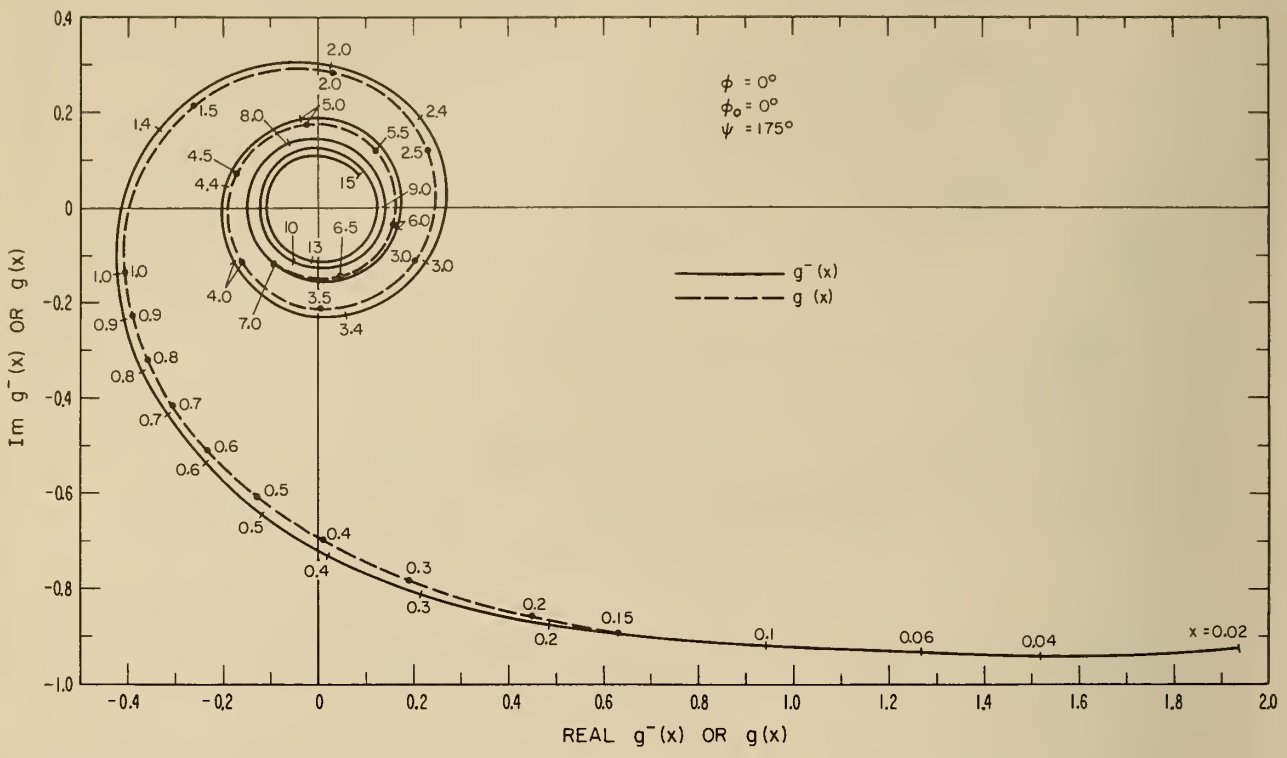

FIGURES 6a AND 6b - NORMALIZED WAVE IMPEDANCE ON SURFACE $\phi = \pi$



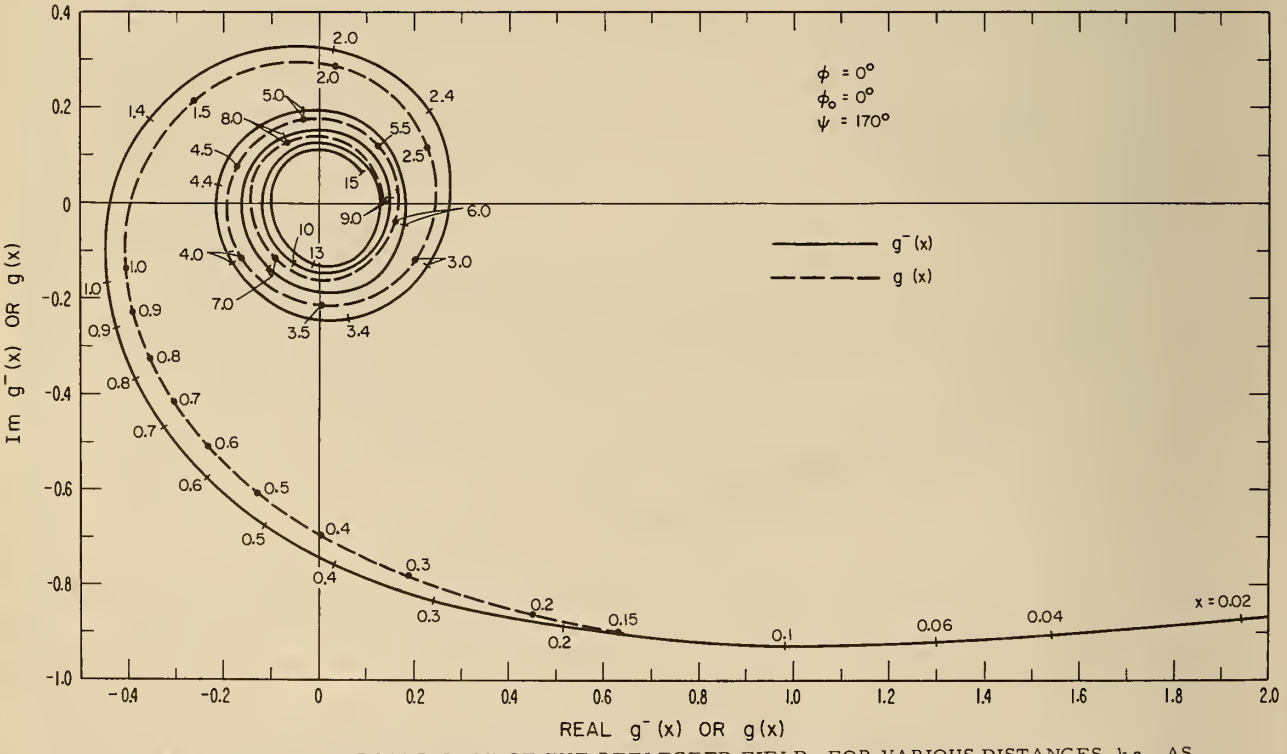




FIGURES 7a AND 7b - ARGAND PLOT OF THE REFLECTED FIELD, FOR VARIOUS DISTANCES $k\rho$, AS OBTAINED FROM EXACT AND APPROXIMATE METHODS

c




d




FIGURES 7c AND 7d - ARGAND PLOT OF THE REFLECTED FIELD, FOR VARIOUS DISTANCES $k\rho$, AS OBTAINED FROM EXACT AND APPROXIMATE METHODS

CASE I

$\phi = 0^{\circ}$ $\psi = 150^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 1.1988E 00 | 3.5884E-03 | 1.1988E 00 | 2.9933E-03 |
| 2.0000E-02 | 1.1972E 00 | 8.2395E-03 | 1.1972E 00 | 6.8822E-03 |
| 4.0000E-02 | 1.1933E 00 | 1.8904E-02 | 1.1935E 00 | 1.5841E-02 |
| 6.0000E-02 | 1.1888E 00 | 3.0704E-02 | 1.1892E 00 | 2.5823E-02 |
| 1.0000E-01 | 1.1780E 00 | 5.6472E-02 | 1.1794E 00 | 4.7900E-02 |
| 2.0000E-01 | 1.1432E 00 | 1.2821E-01 | 1.1504E 00 | 1.1169E-01 |
| 3.0000E-01 | 1.0981E 00 | 2.0540E-01 | 1.1172E 00 | 1.8491E-01 |
| 4.0000E-01 | 1.0436E 00 | 2.8474E-01 | 1.0817E 00 | 2.6636E-01 |
| 5.0000E-01 | 9.8025E-01 | 3.6411E-01 | 1.0457E 00 | 3.5565E-01 |
| 6.0000E-01 | 9.0871E-01 | 4.4189E-01 | 1.0105E 00 | 4.5262E-01 |
| 7.0000E-01 | 8.2962E-01 | 5.1674E-01 | 9.7738E-01 | 5.5706E-01 |
| 8.0000E-01 | 7.4366E-01 | 5.8747E-01 | 9.4771E-01 | 6.6860E-01 |
| 9.0000E-01 | 6.5160E-01 | 6.5307E-01 | 9.2254E-01 | 7.8652E-01 |
| 1.0000E 00 | 5.5427E-01 | 7.1263E-01 | 9.0280E-01 | 9.0975E-01 |
| 1.4000E 00 | 1.3019E-01 | 8.7626E-01 | 8.8588E-01 | 1.4233E 00 |
| 2.0000E 00 | -5.0216E-01 | 8.5478E-01 | 9.9136E-01 | -1.0396E 00 |
| 2.4000E 00 | -8.3112E-01 | 6.6239E-01 | 1.0628E 00 | -6.7290E-01 |
| 3.0000E 00 | -1.0659E 00 | 1.8170E-01 | 1.0813E 00 | -1.6884E-01 |
| 3.4000E 00 | -1.0171E 00 | -1.9140E-01 | 1.0350E 00 | 1.8601E-01 |
| 4.0000E 00 | -6.5723E-01 | -6.8113E-01 | 9.4651E-01 | 8.0325E-01 |
| 4.4000E 00 | -2.8163E-01 | -8.8379E-01 | 9.2758E-01 | 1.2623E 00 |
| 5.0000E 00 | 3.4019E-01 | -9.2054E-01 | 9.8139E-01 | -1.2168E 00 |
| 6.0000E 00 | 1.0175E 00 | -3.0491E-01 | 1.0622E 00 | -2.9116E-01 |
| 7.0000E 00 | 7.6209E-01 | 5.9934E-01 | 9.6953E-01 | 6.6642E-01 |
| 8.0000E 00 | -1.8713E-01 | 9.5407E-01 | 9.7225E-01 | -1.3771E 00 |
| 9.0000E 00 | -9.6031E-01 | 4.2754E-01 | 1.0512E 00 | -4.1886E-01 |
| 1.0000E 01 | -8.5174E-01 | -4.9674E-01 | 9.8601E-01 | 5.2798E-01 |
| 1.3000E 01 | 9.2387E-01 | 3.8041E-01 | 9.9912E-01 | 3.9060E-01 |
| 1.5000E 01 | -7.9972E-01 | 6.5201E-01 | 1.0318E 00 | -6.8400E-01 |
| 1.8000E 01 | 6.9676E-01 | -7.4760E-01 | 1.0219E 00 | -8.2058E-01 |
| 2.0000E 01 | 3.9654E-01 | 8.8019E-01 | 9.6539E-01 | 1.1475E 00 |
| 2.3000E 01 | -5.2638E-01 | -8.1447E-01 | 9.6976E-01 | 9.9704E-01 |
| 2.5000E 01 | 1.0163E 00 | -1.5072E-01 | 1.0274E 00 | -1.4723E-01 |
| 2.8000E 01 | -9.8850E-01 | 2.8481E-01 | 1.0287E 00 | -2.8052E-01 |
| 3.0000E 01 | 1.7687E-01 | -9.7091E-01 | 9.8689E-01 | -1.3906E 00 |
| 3.3000E 01 | -3.2355E-02 | 9.8074E-01 | 9.8127E-01 | -1.5378E 00 |
| 3.5000E 01 | -9.1291E-01 | -4.0356E-01 | 9.9813E-01 | 4.1623E-01 |
| 4.0000E 01 | -6.9147E-01 | 7.4345E-01 | 1.0153E 00 | -8.2161E-01 |
| 4.5000E 01 | 5.2026E-01 | 8.2829E-01 | 9.7813E-01 | 1.0100E 00 |
| 5.0000E 01 | 9.8418E-01 | -2.7312E-01 | 1.0214E 00 | -2.7070E-01 |

CASE I

$\phi = 0^{\circ}$ $\psi = 150^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | -1.4643E-01 | 4.3043E-01 | 4.5466E-01 | -1.2429E 00 |
| 2.0000E-02 | -1.7400E-01 | 4.9388E-01 | 5.2363E-01 | -1.2321E 00 |
| 4.0000E-02 | -2.1185E-01 | 5.6577E-01 | 6.0413E-01 | -1.2125E 00 |
| 6.0000E-02 | -2.4179E-01 | 6.1156E-01 | 6.5762E-01 | -1.1943E 00 |
| 1.0000E-01 | -2.9275E-01 | 6.7205E-01 | 7.3304E-01 | -1.1600E 00 |
| 2.0000E-01 | -4.0143E-01 | 7.5184E-01 | 8.5230E-01 | -1.0804E 00 |
| 3.0000E-01 | -4.9918E-01 | 7.8675E-01 | 9.3175E-01 | -1.0054E 00 |
| 4.0000E-01 | -5.9028E-01 | 7.9656E-01 | 9.9144E-01 | -9.3306E-01 |
| 5.0000E-01 | -6.7540E-01 | 7.8822E-01 | 1.0380E 00 | -8.6233E-01 |
| 6.0000E-01 | -7.5431E-01 | 7.6521E-01 | 1.0745E 00 | -7.9258E-01 |
| 7.0000E-01 | -8.2649E-01 | 7.2969E-01 | 1.1025E 00 | -7.2327E-01 |
| 8.0000E-01 | -8.9138E-01 | 6.8325E-01 | 1.1231E 00 | -6.5399E-01 |
| 9.0000E-01 | -9.4836E-01 | 6.2719E-01 | 1.1370E 00 | -5.8431E-01 |
| 1.0000E 00 | -9.9688E-01 | 5.6267E-01 | 1.1447E 00 | -5.1385E-01 |
| 1.4000E 00 | -1.0977E 00 | 2.4153E-01 | 1.1240E 00 | -2.1658E-01 |
| 2.0000E 00 | -9.5105E-01 | -3.1301E-01 | 1.0012E 00 | 3.1796E-01 |
| 2.4000E 00 | -6.7321E-01 | -6.3600E-01 | 9.2612E-01 | 7.5698E-01 |
| 3.0000E 00 | -8.7890E-02 | -9.1677E-01 | 9.2097E-01 | 1.4752E 00 |
| 3.4000E 00 | 3.2842E-01 | -9.2316E-01 | 9.7984E-01 | -1.2290E 00 |
| 4.0000E 00 | 8.3486E-01 | -6.5860E-01 | 1.0634E 00 | -6.6792E-01 |
| 4.4000E 00 | 1.0182E 00 | -3.4073E-01 | 1.0737E 00 | -3.2292E-01 |
| 5.0000E 00 | 9.9270E-01 | 2.2252E-01 | 1.0173E 00 | 2.2051E-01 |
| 6.0000E 00 | 2.4905E-01 | 9.0418E-01 | 9.3786E-01 | 1.3020E 00 |
| 7.0000E 00 | -7.1576E-01 | 7.4962E-01 | 1.0365E 00 | -8.0850E-01 |
| 8.0000E 00 | -1.0224E 00 | -1.0140E-01 | 1.0274E 00 | 9.8854E-02 |
| 9.0000E 00 | -3.9395E-01 | -8.6249E-01 | 9.4820E-01 | 1.1423E 00 |
| 1.0000E 01 | 5.9216E-01 | -8.2868E-01 | 1.0185E 00 | -9.5035E-01 |
| 1.3000E 01 | -4.6066E-01 | 8.9250E-01 | 1.0044E 00 | -1.0943E 00 |
| 1.5000E 01 | -6.4726E-01 | -7.1962E-01 | 9.6788E-01 | 8.3829E-01 |
| 1.8000E 01 | 7.5340E-01 | 6.2372E-01 | 9.7808E-01 | 6.9151E-01 |
| 2.0000E 01 | -9.4546E-01 | 4.2047E-01 | 1.0347E 00 | -4.1846E-01 |
| 2.3000E 01 | 8.7787E-01 | -5.4000E-01 | 1.0307E 00 | 5.5147E-01 |
| 2.5000E 01 | 1.1349E-01 | 9.6647E-01 | 9.7311E-01 | 1.4539E 00 |
| 2.8000E 01 | -2.5656E-01 | -9.3696E-01 | 9.7145E-01 | 1.3035E 00 |
| 3.0000E 01 | 1.0048E 00 | 1.3131E-01 | 1.0134E 00 | 1.2995E-01 |
| 3.3000E 01 | -1.0188E 00 | 6.1218E-03 | 1.0188E 00 | -6.0086E-03 |
| 3.5000E 01 | 4.5294E-01 | -8.9485E-01 | 1.0029E 00 | -1.1022E 00 |
| 4.0000E 01 | -7.4650E-01 | -6.4238E-01 | 9.8484E-01 | 7.1057E-01 |
| 4.5000E 01 | -8.7348E-01 | 5.3067E-01 | 1.0220E 00 | -5.4594E-01 |
| 5.0000E 01 | 2.5147E-01 | 9.4588E-01 | 9.7874E-01 | 1.3109E 00 |

CASE I

$\phi = 0^{\circ}$ $\psi = 160^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 1.1239E 00 | 5.3682E-03 | 1.1239E 00 | 4.7763E-03 |
| 2.0000E-02 | 1.1225E 00 | 1.1702E-02 | 1.1226E 00 | 1.0424E-02 |
| 4.0000E-02 | 1.1193E 00 | 2.5490E-02 | 1.1196E 00 | 2.2769E-02 |
| 6.0000E-02 | 1.1157E 00 | 4.0167E-02 | 1.1164E 00 | 3.5987E-02 |
| 1.0000E-01 | 1.1070E 00 | 7.1126E-02 | 1.1093E 00 | 6.4162E-02 |
| 2.0000E-01 | 1.0783E 00 | 1.5349E-01 | 1.0892E 00 | 1.4139E-01 |
| 3.0000E-01 | 1.0402E 00 | 2.3887E-01 | 1.0673E 00 | 2.2573E-01 |
| 4.0000E-01 | 9.9298E-01 | 3.2457E-01 | 1.0447E 00 | 3.1591E-01 |
| 5.0000E-01 | 9.3709E-01 | 4.0880E-01 | 1.0224E 00 | 4.1135E-01 |
| 6.0000E-01 | 8.7299E-01 | 4.9017E-01 | 1.0012E 00 | 5.1161E-01 |
| 7.0000E-01 | 8.0123E-01 | 5.6748E-01 | 9.8184E-01 | 6.1625E-01 |
| 8.0000E-01 | 7.2242E-01 | 6.3971E-01 | 9.6494E-01 | 7.2476E-01 |
| 9.0000E-01 | 6.3726E-01 | 7.0593E-01 | 9.5102E-01 | 8.3648E-01 |
| 1.0000E 00 | 5.4653E-01 | 7.6534E-01 | 9.4045E-01 | 9.5067E-01 |
| 1.4000E 00 | 1.4513E-01 | 9.2211E-01 | 9.3346E-01 | 1.4147E 00 |
| 2.0000E 00 | -4.6686E-01 | 8.7865E-01 | 9.9498E-01 | -1.0824E 00 |
| 2.4000E 00 | -7.9192E-01 | 6.6894E-01 | 1.0366E 00 | -7.0141E-01 |
| 3.0000E 00 | -1.0335E 00 | 1.6536E-01 | 1.0467E 00 | -1.5865E-01 |
| 3.4000E 00 | -9.9528E-01 | -2.1802E-01 | 1.0189E 00 | 2.1564E-01 |
| 4.0000E 00 | -6.5509E-01 | -7.1311E-01 | 9.6833E-01 | 8.2778E-01 |
| 4.4000E 00 | -2.9199E-01 | -9.1270E-01 | 9.5827E-01 | 1.2612E 00 |
| 5.0000E 00 | 3.1650E-01 | -9.3721E-01 | 9.8921E-01 | -1.2451E 00 |
| 6.0000E 00 | 9.9298E-01 | -2.9443E-01 | 1.0357E 00 | -2.8825E-01 |
| 7.0000E 00 | 7.5831E-01 | 6.2379E-01 | 9.8191E-01 | 6.8837E-01 |
| 8.0000E 00 | -1.6960E-01 | 9.6927E-01 | 9.8400E-01 | -1.3976E 00 |
| 9.0000E 00 | -9.3933E-01 | 4.2119E-01 | 1.0294E 00 | -4.2152E-01 |
| 1.0000E 01 | -8.4617E-01 | -5.1681E-01 | 9.9151E-01 | 5.4829E-01 |
| 1.3000E 01 | 9.1677E-01 | 3.9728E-01 | 9.9915E-01 | 4.0892E-01 |
| 1.5000E 01 | -7.8268E-01 | 6.5139E-01 | 1.0183E 00 | -6.9410E-01 |
| 1.8000E 01 | 6.8125E-01 | -7.4912E-01 | 1.0126E 00 | -8.3282E-01 |
| 2.0000E 01 | 4.0140E-01 | 8.9416E-01 | 9.8013E-01 | 1.1489E 00 |
| 2.3000E 01 | -5.2908E-01 | -8.2801E-01 | 9.8261E-01 | 1.0022E 00 |
| 2.5000E 01 | 1.0056E 00 | -1.4294E-01 | 1.0157E 00 | -1.4120E-01 |
| 2.8000E 01 | -9.7745E-01 | 2.7893E-01 | 1.0165E 00 | -2.7797E-01 |
| 3.0000E 01 | 1.6726E-01 | -9.7824E-01 | 9.9244E-01 | -1.4015E 00 |
| 3.3000E 01 | -2.4189E-02 | 9.8897E-01 | 9.8926E-01 | -1.5463E 00 |
| 3.5000E 01 | -9.0896E-01 | -4.1404E-01 | 9.9882E-01 | 4.2742E-01 |
| 4.0000E 01 | -6.8102E-01 | 7.4419E-01 | 1.0088E 00 | -8.2969E-01 |
| 4.5000E 01 | 5.2241E-01 | 8.3793E-01 | 9.8744E-01 | 1.0133E 00 |
| 5.0000E 01 | 9.7599E-01 | -2.6856E-01 | 1.0123E 00 | -2.6852E-01 |

CASE I

$\phi = 0^{\circ}$ $\psi = 160^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | -1.2702E-01 | 6.0365E-01 | 6.1687E-01 | -1.3634E 00 |
| 2.0000E-02 | -1.4518E-01 | 6.5757E-01 | 6.7341E-01 | -1.3535E 00 |
| 4.0000E-02 | -1.7221E-01 | 7.1523E-01 | 7.3567E-01 | -1.3345E 00 |
| 6.0000E-02 | -1.9530E-01 | 7.5014E-01 | 7.7515E-01 | -1.3161E 00 |
| 1.0000E-01 | -2.3740E-01 | 7.9382E-01 | 8.2856E-01 | -1.2802E 00 |
| 2.0000E-01 | -3.3478E-01 | 8.4458E-01 | 9.0851E-01 | -1.1934E 00 |
| 3.0000E-01 | -4.2741E-01 | 8.5881E-01 | 9.5929E-01 | -1.1090E 00 |
| 4.0000E-01 | -5.1624E-01 | 8.5221E-01 | 9.9637E-01 | -1.0261E 00 |
| 5.0000E-01 | -6.0079E-01 | 8.3013E-01 | 1.0247E 00 | -9.4432E-01 |
| 6.0000E-01 | -6.8031E-01 | 7.9527E-01 | 1.0466E 00 | -8.6315E-01 |
| 7.0000E-01 | -7.5398E-01 | 7.4935E-01 | 1.0630E 00 | -7.8232E-01 |
| 8.0000E-01 | -8.2104E-01 | 6.9369E-01 | 1.0749E 00 | -7.0152E-01 |
| 9.0000E-01 | -8.8076E-01 | 6.2939E-01 | 1.0825E 00 | -6.2046E-01 |
| 1.0000E 00 | -9.3248E-01 | 5.5750E-01 | 1.0864E 00 | -5.3885E-01 |
| 1.4000E 00 | -1.0495E 00 | 2.1418E-01 | 1.0711E 00 | -2.0132E-01 |
| 2.0000E 00 | -9.3176E-01 | -3.5563E-01 | 9.9732E-01 | 3.6461E-01 |
| 2.4000E 00 | -6.7266E-01 | -6.7878E-01 | 9.5562E-01 | 7.8993E-01 |
| 3.0000E 00 | -1.0951E-01 | -9.4840E-01 | 9.5470E-01 | 1.4558E 00 |
| 3.4000E 00 | 2.9802E-01 | -9.4246E-01 | 9.8845E-01 | -1.2645E 00 |
| 4.0000E 00 | 8.0169E-01 | -6.5724E-01 | 1.0367E 00 | -6.8671E-01 |
| 4.4000E 00 | 9.8965E-01 | -3.2713E-01 | 1.0423E 00 | -3.1925E-01 |
| 5.0000E 00 | 9.7788E-01 | 2.4824E-01 | 1.0089E 00 | 2.4860E-01 |
| 6.0000E 00 | 2.6160E-01 | 9.2819E-01 | 9.6435E-01 | 1.2961E 00 |
| 7.0000E 00 | -6.9078E-01 | 7.5178E-01 | 1.0209E 00 | -8.2766E-01 |
| 8.0000E 00 | -1.0081E 00 | -1.2001E-01 | 1.0152E 00 | 1.1848E-01 |
| 9.0000E 00 | -4.0148E-01 | -8.8328E-01 | 9.7024E-01 | 1.1442E 00 |
| 1.0000E 01 | 5.7170E-01 | -8.3330E-01 | 1.0106E 00 | -9.6948E-01 |
| 1.3000E 01 | -4.4346E-01 | 8.9899E-01 | 1.0024E 00 | -1.1125E 00 |
| 1.5000E 01 | -6.4845E-01 | -7.3670E-01 | 9.8143E-01 | 8.4902E-01 |
| 1.8000E 01 | 7.5230E-01 | 6.3930E-01 | 9.8725E-01 | 7.0438E-01 |
| 2.0000E 01 | -9.3159E-01 | 4.1526E-01 | 1.0200E 00 | -4.1932E-01 |
| 2.3000E 01 | 8.6437E-01 | -5.3701E-01 | 1.0176E 00 | -5.5591E-01 |
| 2.5000E 01 | 1.2149E-01 | 9.7704E-01 | 9.8457E-01 | 1.4471E 00 |
| 2.8000E 01 | -2.6264E-01 | -9.4791E-01 | 9.8362E-01 | 1.3005E 00 |
| 3.0000E 01 | 9.9764E-01 | 1.4106E-01 | 1.0076E 00 | 1.4047E-01 |
| 3.3000E 01 | -1.0107E 00 | -2.0828E-03 | 1.0107E 00 | 2.0607E-03 |
| 3.5000E 01 | 4.4240E-01 | -8.9865E-01 | 1.0016E 00 | -1.1133E 00 |
| 4.0000E 01 | -7.4589E-01 | -6.5284E-01 | 9.9124E-01 | 7.1897E-01 |
| 4.5000E 01 | -8.6386E-01 | 5.2842E-01 | 1.0127E 00 | -5.4897E-01 |
| 5.0000E 01 | 2.5611E-01 | 9.5402E-01 | 9.8780E-01 | 1.3085E 00 |

CASE I

$\phi = 0^{\circ}$ $\psi = 170^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 1.0581E 00 | 7.5196E-03 | 1.0581E 00 | 7.1066E-03 |
| 2.0000E-02 | 1.0572E 00 | 1.5659E-02 | 1.0573E 00 | 1.4811E-02 |
| 4.0000E-02 | 1.0551E 00 | 3.2593E-02 | 1.0556E 00 | 3.0880E-02 |
| 6.0000E-02 | 1.0527E 00 | 5.0019E-02 | 1.0539E 00 | 4.7480E-02 |
| 1.0000E-01 | 1.0466E 00 | 8.5700E-02 | 1.0501E 00 | 8.1704E-02 |
| 2.0000E-01 | 1.0247E 00 | 1.7706E-01 | 1.0399E 00 | 1.7110E-01 |
| 3.0000E-01 | 9.9343E-01 | 2.6889E-01 | 1.0292E 00 | 2.6433E-01 |
| 4.0000E-01 | 9.5302E-01 | 3.5930E-01 | 1.0185E 00 | 3.6054E-01 |
| 5.0000E-01 | 9.0375E-01 | 4.4694E-01 | 1.0082E 00 | 4.5927E-01 |
| 6.0000E-01 | 8.4605E-01 | 5.3064E-01 | 9.9869E-01 | 5.6018E-01 |
| 7.0000E-01 | 7.8043E-01 | 6.0941E-01 | 9.9018E-01 | 6.6296E-01 |
| 8.0000E-01 | 7.0749E-01 | 6.8233E-01 | 9.8291E-01 | 7.6730E-01 |
| 9.0000E-01 | 6.2789E-01 | 7.4857E-01 | 9.7704E-01 | 8.7285E-01 |
| 1.0000E 00 | 5.4240E-01 | 8.0743E-01 | 9.7269E-01 | 9.7928E-01 |
| 1.4000E 00 | 1.5842E-01 | 9.5752E-01 | 9.7053E-01 | 1.4068E 00 |
| 2.0000E 00 | -4.3879E-01 | 8.9609E-01 | 9.9776E-01 | -1.1154E 00 |
| 2.4000E 00 | -7.6151E-01 | 6.7293E-01 | 1.0162E 00 | -7.2372E-01 |
| 3.0000E 00 | -1.0091E 00 | 1.5204E-01 | 1.0204E 00 | -1.4955E-01 |
| 3.4000E 00 | -9.7915E-01 | -2.3888E-01 | 1.0079E 00 | 2.3929E-01 |
| 4.0000E 00 | -6.5409E-01 | -7.3758E-01 | 9.8583E-01 | 8.4532E-01 |
| 4.4000E 00 | -3.0043E-01 | -9.3456E-01 | 9.8167E-01 | 1.2598E 00 |
| 5.0000E 00 | 2.9817E-01 | -9.4951E-01 | 9.9522E-01 | -1.2665E 00 |
| 6.0000E 00 | 9.7454E-01 | -2.8612E-01 | 1.0157E 00 | -2.8557E-01 |
| 7.0000E 00 | 7.5575E-01 | 6.4240E-01 | 9.9189E-01 | 7.0450E-01 |
| 8.0000E 00 | -1.5612E-01 | 9.8060E-01 | 9.9295E-01 | -1.4129E 00 |
| 9.0000E 00 | -9.2349E-01 | 4.1616E-01 | 1.0129E 00 | -4.2339E-01 |
| 1.0000E 01 | -8.4214E-01 | -5.3207E-01 | 9.9614E-01 | 5.6348E-01 |
| 1.3000E 01 | 9.1150E-01 | 4.1011E-01 | 9.9952E-01 | 4.2280E-01 |
| 1.5000E 01 | -7.6977E-01 | 6.5081E-01 | 1.0080E 00 | -7.0185E-01 |
| 1.8000E 01 | 6.6950E-01 | -7.5020E-01 | 1.0055E 00 | -8.4218E-01 |
| 2.0000E 01 | 4.0514E-01 | 9.0472E-01 | 9.9129E-01 | 1.1498E 00 |
| 2.3000E 01 | -5.3118E-01 | -8.3824E-01 | 9.9237E-01 | 1.0060E 00 |
| 2.5000E 01 | 9.9750E-01 | -1.3701E-01 | 1.0069E 00 | -1.3650E-01 |
| 2.8000E 01 | -9.6911E-01 | 2.7444E-01 | 1.0072E 00 | -2.7596E-01 |
| 3.0000E 01 | 1.5996E-01 | -9.8375E-01 | 9.9667E-01 | -1.4096E 00 |
| 3.3000E 01 | -1.8088E-02 | 9.9511E-01 | 9.9528E-01 | -1.5526E 00 |
| 3.5000E 01 | -9.0600E-01 | -4.2198E-01 | 9.9945E-01 | 4.3588E-01 |
| 4.0000E 01 | -6.7311E-01 | 7.4472E-01 | 1.0038E 00 | -8.3586E-01 |
| 4.5000E 01 | 5.2405E-01 | 8.4522E-01 | 9.9450E-01 | 1.0158E 00 |
| 5.0000E 01 | 9.6980E-01 | -2.6510E-01 | 1.0054E 00 | -2.6684E-01 |

CASE I

$\phi = 0^{\circ}$ $\psi = 170^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO |
|---|---|---|---|---|
| 10.0000E-03 | -8.1732E-02 | 7.9592E-01 | 8.0011E-01 | -1.4685E 00 |
| 2.0000E-02 | -9.3177E-02 | 8.2838E-01 | 8.3361E-01 | -1.4588E 00 |
| 4.0000E-02 | -1.1361E-01 | 8.6122E-01 | 8.6868E-01 | -1.4396E 00 |
| 6.0000E-02 | -1.3316E-01 | 8.7999E-01 | 8.9001E-01 | -1.4206E 00 |
| 1.0000E-01 | -1.7150E-01 | 9.0167E-01 | 9.1784E-01 | -1.3828E 00 |
| 2.0000E-01 | -2.6599E-01 | 9.1983E-01 | 9.5752E-01 | -1.2893E 00 |
| 3.0000E-01 | -3.5881E-01 | 9.1376E-01 | 9.8168E-01 | -1.1966E 00 |
| 4.0000E-01 | -4.4902E-01 | 8.9230E-01 | 9.9891E-01 | -1.1046E 00 |
| 5.0000E-01 | -5.3558E-01 | 8.5849E-01 | 1.0119E 00 | -1.0130E 00 |
| 6.0000E-01 | -6.1751E-01 | 8.1397E-01 | 1.0217E 00 | -9.2178E-01 |
| 7.0000E-01 | -6.9390E-01 | 7.5985E-01 | 1.0290E 00 | -8.3073E-01 |
| 8.0000E-01 | -7.6391E-01 | 6.9711E-01 | 1.0342E 00 | -7.3971E-01 |
| 9.0000E-01 | -8.2677E-01 | 6.2665E-01 | 1.0374E 00 | -6.4857E-01 |
| 1.0000E 00 | -8.8181E-01 | 5.4935E-01 | 1.0389E 00 | -5.5715E-01 |
| 1.4000E 00 | -1.0133E 00 | 1.9035E-01 | 1.0310E 00 | -1.8569E-01 |
| 2.0000E 00 | -9.1864E-01 | -3.8924E-01 | 9.9770E-01 | 4.0078E-01 |
| 2.4000E 00 | -6.7376E-01 | -7.1161E-01 | 9.7997E-01 | 8.1271E-01 |
| 3.0000E 00 | -1.2695E-01 | -9.7192E-01 | 9.8017E-01 | 1.4409E 00 |
| 3.4000E 00 | 2.7435E-01 | -9.5635E-01 | 9.9493E-01 | -1.2914E 00 |
| 4.0000E 00 | 7.7650E-01 | -6.5545E-01 | 1.0162E 00 | -7.0107E-01 |
| 4.4000E 00 | 9.6821E-01 | -3.1620E-01 | 1.0185E 00 | -3.1566E-01 |
| 5.0000E 00 | 9.6710E-01 | 2.6804E-01 | 1.0036E 00 | 2.7037E-01 |
| 6.0000E 00 | 2.7150E-01 | 9.4620E-01 | 9.8438E-01 | 1.2914E 00 |
| 7.0000E 00 | -6.7181E-01 | 7.5307E-01 | 1.0092E 00 | -8.4236E-01 |
| 8.0000E 00 | -9.9753E-01 | -1.3427E-01 | 1.0065E 00 | 1.3380E-01 |
| 9.0000E 00 | -4.0739E-01 | -8.9894E-01 | 9.8695E-01 | 1.1453E 00 |
| 1.0000E 01 | 5.5617E-01 | -8.3660E-01 | 1.0046E 00 | -9.8409E-01 |
| 1.3000E 01 | -4.3039E-01 | 9.0378E-01 | 1.0010E 00 | -1.1264E 00 |
| 1.5000E 01 | -6.4945E-01 | -7.4961E-01 | 9.9182E-01 | 8.5686E-01 |
| 1.8000E 01 | 7.5154E-01 | 6.5110E-01 | 9.9436E-01 | 7.1391E-01 |
| 2.0000E 01 | -9.2111E-01 | 4.1126E-01 | 1.0088E 00 | -4.1992E-01 |
| 2.3000E 01 | 8.5418E-01 | -5.3469E-01 | 1.0077E 00 | -5.5929E-01 |
| 2.5000E 01 | 1.2758E-01 | 9.8501E-01 | 9.9324E-01 | 1.4420E 00 |
| 2.8000E 01 | -2.6728E-01 | -9.5617E-01 | 9.9282E-01 | 1.2982E 00 |
| 3.0000E 01 | 9.9224E-01 | 1.4846E-01 | 1.0033E 00 | 1.4852E-01 |
| 3.3000E 01 | -1.0047E 00 | -8.3709E-03 | 1.0047E 00 | 8.3319E-03 |
| 3.5000E 01 | 4.3442E-01 | -9.0150E-01 | 1.0007E 00 | -1.1217E 00 |
| 4.0000E 01 | -7.4546E-01 | -6.6076E-01 | 9.9615E-01 | 7.2524E-01 |
| 4.5000E 01 | -8.5658E-01 | 5.2669E-01 | 1.0056E 00 | -5.5129E-01 |
| 5.0000E 01 | 2.5963E-01 | 9.6018E-01 | 9.9466E-01 | 1.3067E 00 |

CASE I

$\phi = 0^{\circ}$ $\psi = 175^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 1.0281E 00 | 8.7218E-03 | 1.0282E 00 | 8.4829E-03 |
| 2.0000E-02 | 1.0276E 00 | 1.7788E-02 | 1.0277E 00 | 1.7309E-02 |
| 4.0000E-02 | 1.0262E 00 | 3.6267E-02 | 1.0269E 00 | 3.5326E-02 |
| 6.0000E-02 | 1.0245E 00 | 5.4996E-02 | 1.0259E 00 | 5.3631E-02 |
| 1.0000E-01 | 1.0198E 00 | 9.2839E-02 | 1.0240E 00 | 9.0788E-02 |
| 2.0000E-01 | 1.0014E 00 | 1.8811E-01 | 1.0189E 00 | 1.8569E-01 |
| 3.0000E-01 | 9.7343E-01 | 2.8261E-01 | 1.0136E 00 | 2.8256E-01 |
| 4.0000E-01 | 9.3617E-01 | 3.7490E-01 | 1.0084E 00 | 3.8091E-01 |
| 5.0000E-01 | 8.8990E-01 | 4.6383E-01 | 1.0035E 00 | 4.8047E-01 |
| 6.0000E-01 | 8.3504E-01 | 5.4838E-01 | 9.9901E-01 | 5.8107E-01 |
| 7.0000E-01 | 7.7210E-01 | 6.2761E-01 | 9.9500E-01 | 6.8253E-01 |
| 8.0000E-01 | 7.0168E-01 | 7.0068E-01 | 9.9162E-01 | 7.8469E-01 |
| 9.0000E-01 | 6.2445E-01 | 7.6681E-01 | 9.8891E-01 | 8.8737E-01 |
| 1.0000E 00 | 5.4116E-01 | 8.2532E-01 | 9.8692E-01 | 9.9043E-01 |
| 1.4000E 00 | 1.6441E-01 | 9.7227E-01 | 9.8608E-01 | 1.4033E 00 |
| 2.0000E 00 | -4.2688E-01 | 9.0313E-01 | 9.9893E-01 | -1.1293E 00 |
| 2.4000E 00 | -7.4878E-01 | 6.7433E-01 | 1.0077E 00 | -7.3313E-01 |
| 3.0000E 00 | -9.9896E-01 | 1.4631E-01 | 1.0096E 00 | -1.4543E-01 |
| 3.4000E 00 | -9.7259E-01 | -2.4766E-01 | 1.0036E 00 | 2.4934E-01 |
| 4.0000E 00 | -6.5382E-01 | -7.4774E-01 | 9.9328E-01 | 8.5231E-01 |
| 4.4000E 00 | -3.0406E-01 | -9.4359E-01 | 9.9136E-01 | 1.2591E 00 |
| 5.0000E 00 | 2.9051E-01 | -9.5451E-01 | 9.9774E-01 | -1.2753E 00 |
| 6.0000E 00 | 9.6693E-01 | -2.8259E-01 | 1.0074E 00 | -2.8434E-01 |
| 7.0000E 00 | 7.5476E-01 | 6.5011E-01 | 9.9615E-01 | 7.1105E-01 |
| 8.0000E 00 | -1.5051E-01 | 9.8525E-01 | 9.9668E-01 | -1.4192E 00 |
| 9.0000E 00 | -9.1695E-01 | 4.1404E-01 | 1.0061E 00 | -4.2413E-01 |
| 1.0000E 01 | -8.4051E-01 | -5.3839E-01 | 9.9816E-01 | 5.6970E-01 |
| 1.3000E 01 | 9.0936E-01 | 4.1543E-01 | 9.9975E-01 | 4.2853E-01 |
| 1.5000E 01 | -7.6443E-01 | 6.5054E-01 | 1.0038E 00 | -7.0508E-01 |
| 1.8000E 01 | 6.6464E-01 | -7.5063E-01 | 1.0026E 00 | -8.4608E-01 |
| 2.0000E 01 | 4.0670E-01 | 9.0908E-01 | 9.9590E-01 | 1.1501E 00 |
| 2.3000E 01 | -5.3206E-01 | -8.4246E-01 | 9.9641E-01 | 1.0075E 00 |
| 2.5000E 01 | 9.9417E-01 | -1.3455E-01 | 1.0032E 00 | -1.3452E-01 |
| 2.8000E 01 | -9.6567E-01 | 2.7258E-01 | 1.0034E 00 | -2.7511E-01 |
| 3.0000E 01 | 1.5693E-01 | -9.8603E-01 | 9.9844E-01 | -1.4130E 00 |
| 3.3000E 01 | -1.5538E-02 | 9.9766E-01 | 9.9778E-01 | -1.5552E 00 |
| 3.5000E 01 | -9.0479E-01 | -4.2526E-01 | 9.9974E-01 | 4.3937E-01 |
| 4.0000E 01 | -6.6984E-01 | 7.4494E-01 | 1.0018E 00 | -8.3843E-01 |
| 4.5000E 01 | 5.2473E-01 | 8.4823E-01 | 9.9741E-01 | 1.0168E 00 |
| 5.0000E 01 | 9.6725E-01 | -2.6367E-01 | 1.0025E 00 | -2.6613E-01 |

CASE I

$\phi = 0^{\circ}$ $\psi = 175^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | -4.9124E-02 | 8.9691E-01 | 8.9825E-01 | -1.5161E 00 |
| 2.0000E-02 | -5.9052E-02 | 9.1437E-01 | 9.1628E-01 | -1.5063E 00 |
| 4.0000E-02 | -7.8418E-02 | 9.3142E-01 | 9.3471E-01 | -1.4868E 00 |
| 6.0000E-02 | -9.7666E-02 | 9.4066E-01 | 9.4571E-01 | -1.4673E 00 |
| 1.0000E-01 | -1.3613E-01 | 9.5013E-01 | 9.5983E-01 | -1.4285E 00 |
| 2.0000E-01 | -2.3199E-01 | 9.5166E-01 | 9.7953E-01 | -1.3317E 00 |
| 3.0000E-01 | -3.2643E-01 | 9.3601E-01 | 9.9129E-01 | -1.2352E 00 |
| 4.0000E-01 | -4.1826E-01 | 9.0787E-01 | 9.9959E-01 | -1.1391E 00 |
| 5.0000E-01 | -5.0642E-01 | 8.6899E-01 | 1.0058E 00 | -1.0431E 00 |
| 6.0000E-01 | -5.8993E-01 | 8.2038E-01 | 1.0105E 00 | -9.4737E-01 |
| 7.0000E-01 | -6.6789E-01 | 7.6287E-01 | 1.0139E 00 | -8.5169E-01 |
| 8.0000E-01 | -7.3946E-01 | 6.9725E-01 | 1.0163E 00 | -7.5603E-01 |
| 9.0000E-01 | -8.0389E-01 | 6.2431E-01 | 1.0178E 00 | -6.6031E-01 |
| 1.0000E 00 | -8.6052E-01 | 5.4486E-01 | 1.0185E 00 | -5.6445E-01 |
| 1.4000E 00 | -9.9850E-01 | 1.7975E-01 | 1.0145E 00 | -1.7811E-01 |
| 2.0000E 00 | -9.1360E-01 | -4.0342E-01 | 9.9870E-01 | 4.1582E-01 |
| 2.4000E 00 | -6.7458E-01 | -7.2524E-01 | 9.9047E-01 | 8.2158E-01 |
| 3.0000E 00 | -1.3440E-01 | -9.8151E-01 | 9.9067E-01 | 1.4347E 00 |
| 3.4000E 00 | 2.6443E-01 | -9.6193E-01 | 9.9761E-01 | -1.3025E 00 |
| 4.0000E 00 | 7.6607E-01 | -6.5454E-01 | 1.0076E 00 | -7.0705E-01 |
| 4.4000E 00 | 9.5941E-01 | -3.1154E-01 | 1.0087E 00 | -3.1398E-01 |
| 5.0000E 00 | 9.6275E-01 | 2.7629E-01 | 1.0016E 00 | 2.7947E-01 |
| 6.0000E 00 | 2.7567E-01 | 9.5361E-01 | 9.9265E-01 | 1.2894E 00 |
| 7.0000E 00 | -6.6397E-01 | 7.5353E-01 | 1.0043E 00 | -8.4850E-01 |
| 8.0000E 00 | -9.9320E-01 | -1.4020E-01 | 1.0030E 00 | 1.4023E-01 |
| 9.0000E 00 | -4.0989E-01 | -9.0540E-01 | 9.9386E-01 | 1.1457E 00 |
| 1.0000E 01 | 5.4974E-01 | -8.3792E-01 | 1.0022E 00 | -9.9016E-01 |
| 1.3000E 01 | -4.2498E-01 | 9.0573E-01 | 1.0005E 00 | -1.1321E 00 |
| 1.5000E 01 | -6.4990E-01 | -7.5494E-01 | 9.9614E-01 | 8.6004E-01 |
| 1.8000E 01 | 7.5125E-01 | 6.5598E-01 | 9.9734E-01 | 7.1780E-01 |
| 2.0000E 01 | -9.1679E-01 | 4.0959E-01 | 1.0041E 00 | -4.2016E-01 |
| 2.3000E 01 | 8.4997E-01 | -5.3371E-01 | 1.0036E 00 | -5.6070E-01 |
| 2.5000E 01 | 1.3011E-01 | 9.8829E-01 | 9.9682E-01 | 1.4399E 00 |
| 2.8000E 01 | -2.6920E-01 | -9.5958E-01 | 9.9663E-01 | 1.2973E 00 |
| 3.0000E 01 | 9.9002E-01 | 1.5152E-01 | 1.0015E 00 | 1.5187E-01 |
| 3.3000E 01 | -1.0022E 00 | -1.0960E-02 | 1.0022E 00 | 1.0936E-02 |
| 3.5000E 01 | 4.3112E-01 | -9.0267E-01 | 1.0003E 00 | -1.1252E 00 |
| 4.0000E 01 | -7.4528E-01 | -6.6403E-01 | 9.9819E-01 | 7.2781E-01 |
| 4.5000E 01 | -8.5358E-01 | 5.2598E-01 | 1.0026E 00 | -5.5225E-01 |
| 5.0000E 01 | 2.6109E-01 | 9.6272E-01 | 9.9749E-01 | 1.3060E 00 |

CASE I

$\phi = 0^{\circ}$ $\psi = 180^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 9.9995E-01 | 9.9998E-03 | 1.0000E 00 | 10.0000E-03 |
| 2.0000E-02 | 9.9980E-01 | 1.9999E-02 | 1.0000E 00 | 2.0000E-02 |
| 4.0000E-02 | 9.9920E-01 | 3.9989E-02 | 1.0000E 00 | 4.0000E-02 |
| 6.0000E-02 | 9.9820E-01 | 5.9964E-02 | 1.0000E 00 | 6.0000E-02 |
| 1.0000E-01 | 9.9500E-01 | 9.9833E-02 | 1.0000E 00 | 10.0000E-02 |
| 2.0000E-01 | 9.8007E-01 | 1.9867E-01 | 1.0000E 00 | 2.0000E-01 |
| 3.0000E-01 | 9.5534E-01 | 2.9552E-01 | 1.0000E 00 | 3.0000E-01 |
| 4.0000E-01 | 9.2106E-01 | 3.8942E-01 | 1.0000E 00 | 4.0000E-01 |
| 5.0000E-01 | 8.7758E-01 | 4.7943E-01 | 1.0000E 00 | 5.0000E-01 |
| 6.0000E-01 | 8.2534E-01 | 5.6464E-01 | 1.0000E 00 | 6.0000E-01 |
| 7.0000E-01 | 7.6485E-01 | 6.4422E-01 | 1.0000E 00 | 7.0000E-01 |
| 8.0000E-01 | 6.9672E-01 | 7.1736E-01 | 1.0000E 00 | 7.9999E-01 |
| 9.0000E-01 | 6.2163E-01 | 7.8333E-01 | 1.0000E 00 | 8.9998E-01 |
| 1.0000E 00 | 5.4030E-01 | 8.4147E-01 | 1.0000E 00 | 10.0000E-01 |
| 1.4000E 00 | 1.6997E-01 | 9.8545E-01 | 1.0000E 00 | 1.4000E 00 |
| 2.0000E 00 | -4.1619E-01 | 9.0930E-01 | 1.0000E 00 | -1.1416E 00 |
| 2.4000E 00 | -7.3739E-01 | 6.7547E-01 | 1.0000E 00 | -7.4160E-01 |
| 3.0000E 00 | -9.9000E-01 | 1.4112E-01 | 1.0000E 00 | -1.4160E-01 |
| 3.4000E 00 | -9.6680E-01 | -2.5554E-01 | 1.0000E 00 | 2.5840E-01 |
| 4.0000E 00 | -6.5366E-01 | -7.5681E-01 | 1.0000E 00 | 8.5840E-01 |
| 4.4000E 00 | -3.0737E-01 | -9.5161E-01 | 1.0000E 00 | 1.2584E 00 |
| 5.0000E 00 | 2.8366E-01 | -9.5893E-01 | 1.0000E 00 | -1.2832E 00 |
| 6.0000E 00 | 9.6017E-01 | -2.7942E-01 | 1.0000E 00 | -2.8319E-01 |
| 7.0000E 00 | 7.5389E-01 | 6.5698E-01 | 9.9999E-01 | 7.1682E-01 |
| 8.0000E 00 | -1.4549E-01 | 9.8937E-01 | 1.0000E 00 | -1.4248E 00 |
| 9.0000E 00 | -9.1114E-01 | 4.1213E-01 | 1.0000E 00 | -4.2478E-01 |
| 1.0000E 01 | -8.3910E-01 | -5.4403E-01 | 1.0000E 00 | 5.7521E-01 |
| 1.3000E 01 | 9.0744E-01 | 4.2016E-01 | 9.9999E-01 | 4.3363E-01 |
| 1.5000E 01 | -7.5966E-01 | 6.5031E-01 | 9.9999E-01 | -7.0800E-01 |
| 1.8000E 01 | 6.6033E-01 | -7.5099E-01 | 1.0000E 00 | -8.4955E-01 |
| 2.0000E 01 | 4.0806E-01 | 9.1294E-01 | 9.9999E-01 | 1.1505E 00 |
| 2.3000E 01 | -5.3286E-01 | -8.4623E-01 | 1.0000E 00 | 1.0088E 00 |
| 2.5000E 01 | 9.9121E-01 | -1.3236E-01 | 1.0000E 00 | -1.3275E-01 |
| 2.8000E 01 | -9.6260E-01 | 2.7092E-01 | 10.0000E-01 | -2.7435E-01 |
| 3.0000E 01 | 1.5422E-01 | -9.8805E-01 | 1.0000E 00 | -1.4160E 00 |
| 3.3000E 01 | -1.3203E-02 | 9.9995E-01 | 1.0000E 00 | -1.5576E 00 |
| 3.5000E 01 | -9.0369E-01 | -4.2817E-01 | 10.0000E-01 | 4.4247E-01 |
| 4.0000E 01 | -6.6689E-01 | 7.4515E-01 | 9.9999E-01 | -8.4077E-01 |
| 4.5000E 01 | 5.2530E-01 | 8.5089E-01 | 9.9998E-01 | 1.0177E 00 |
| 5.0000E 01 | 9.6497E-01 | -2.6239E-01 | 1.0000E 00 | -2.6550E-01 |

CASE I

$\phi = 0^{\circ}$ $\psi = 180^{\circ}$

| X | RE(EQ) | IM(EQ) | EQ(AMP) | PHASE(EQ) |
|---|---|---|---|---|
| 10.0000E-03 | -9.9965E-03 | 9.9995E-01 | 10.0000E-01 | -1.5608E 00 |
| 2.0000E-02 | -1.9995E-02 | 9.9980E-01 | 10.0000E-01 | -1.5508E 00 |
| 4.0000E-02 | -3.9986E-02 | 9.9920E-01 | 10.0000E-01 | -1.5308E 00 |
| 6.0000E-02 | -5.9961E-02 | 9.9820E-01 | 10.0000E-01 | -1.5108E 00 |
| 1.0000E-01 | -9.9830E-02 | 9.9500E-01 | 10.0000E-01 | -1.4708E 00 |
| 2.0000E-01 | -1.9867E-01 | 9.8007E-01 | 10.0000E-01 | -1.3708E 00 |
| 3.0000E-01 | -2.9552E-01 | 9.5534E-01 | 10.0000E-01 | -1.2708E 00 |
| 4.0000E-01 | -3.8941E-01 | 9.2106E-01 | 10.0000E-01 | -1.1708E 00 |
| 5.0000E-01 | -4.7941E-01 | 8.7758E-01 | 10.0000E-01 | -1.0708E 00 |
| 6.0000E-01 | -5.6462E-01 | 8.2534E-01 | 9.9999E-01 | -9.7082E-01 |
| 7.0000E-01 | -6.4417E-01 | 7.6485E-01 | 9.9997E-01 | -8.7083E-01 |
| 8.0000E-01 | -7.1727E-01 | 6.9671E-01 | 9.9994E-01 | -7.7086E-01 |
| 9.0000E-01 | -7.8318E-01 | 6.2162E-01 | 9.9989E-01 | -6.7090E-01 |
| 1.0000E 00 | -8.4147E-01 | 5.4030E-01 | 1.0000E 00 | -5.7080E-01 |
| 1.4000E 00 | -9.8547E-01 | 1.6997E-01 | 1.0000E 00 | -1.7079E-01 |
| 2.0000E 00 | -9.0947E-01 | -4.1617E-01 | 1.0002E 00 | 4.2915E-01 |
| 2.4000E 00 | -6.7546E-01 | -7.3739E-01 | 9.9999E-01 | 8.2921E-01 |
| 3.0000E 00 | -1.4113E-01 | -9.9000E-01 | 1.0000E 00 | 1.4292E 00 |
| 3.4000E 00 | 2.5553E-01 | -9.6680E-01 | 1.0000E 00 | -1.3124E 00 |
| 4.0000E 00 | 7.5677E-01 | -6.5365E-01 | 9.9998E-01 | -7.1242E-01 |
| 4.4000E 00 | 9.5151E-01 | -3.0736E-01 | 9.9992E-01 | -3.1244E-01 |
| 5.0000E 00 | 9.5894E-01 | 2.8366E-01 | 1.0000E 00 | 2.8761E-01 |
| 6.0000E 00 | 2.7942E-01 | 9.6017E-01 | 1.0000E 00 | 1.2876E 00 |
| 7.0000E 00 | -6.5703E-01 | 7.5390E-01 | 1.0000E 00 | -8.5395E-01 |
| 8.0000E 00 | -9.8935E-01 | -1.4549E-01 | 9.9999E-01 | 1.4601E-01 |
| 9.0000E 00 | -4.1213E-01 | -9.1113E-01 | 1.0000E 00 | 1.1460E 00 |
| 1.0000E 01 | 5.4398E-01 | -8.3909E-01 | 9.9999E-01 | -9.9562E-01 |
| 1.3000E 01 | -4.2019E-01 | 9.0745E-01 | 1.0000E 00 | -1.1371E 00 |
| 1.5000E 01 | -6.5026E-01 | -7.5968E-01 | 9.9997E-01 | 8.6285E-01 |
| 1.8000E 01 | 7.5102E-01 | 6.6032E-01 | 1.0000E 00 | 7.2122E-01 |
| 2.0000E 01 | -9.1298E-01 | 4.0808E-01 | 1.0000E 00 | -4.2033E-01 |
| 2.3000E 01 | 8.4620E-01 | -5.3285E-01 | 10.0000E-01 | -5.6197E-01 |
| 2.5000E 01 | 1.3236E-01 | 9.9121E-01 | 1.0000E 00 | 1.4380E 00 |
| 2.8000E 01 | -2.7090E-01 | -9.6261E-01 | 1.0000E 00 | 1.2965E 00 |
| 3.0000E 01 | 9.8802E-01 | 1.5424E-01 | 9.9999E-01 | 1.5486E-01 |
| 3.3000E 01 | -9.9986E-01 | -1.3240E-02 | 9.9995E-01 | 1.3241E-02 |
| 3.5000E 01 | 4.2819E-01 | -9.0370E-01 | 1.0000E 00 | -1.1283E 00 |
| 4.0000E 01 | -7.4508E-01 | -6.6692E-01 | 9.9996E-01 | 7.3010E-01 |
| 4.5000E 01 | -8.5094E-01 | 5.2532E-01 | 1.0000E 00 | -5.5308E-01 |
| 5.0000E 01 | 2.6239E-01 | 9.6497E-01 | 1.0000E 00 | 1.3053E 00 |

CASE I

$\phi = 0^{\circ}$ $\psi = 185^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 9.7340E-01 | 1.1346E-02 | 9.7346E-01 | 1.1656E-02 |
| 2.0000E-02 | 9.7369E-01 | 2.2276E-02 | 9.7395E-01 | 2.2874E-02 |
| 4.0000E-02 | 9.7394E-01 | 4.3737E-02 | 9.7492E-01 | 4.4877E-02 |
| 6.0000E-02 | 9.7374E-01 | 6.4897E-02 | 9.7590E-01 | 6.6549E-02 |
| 1.0000E-01 | 9.7207E-01 | 1.0666E-01 | 9.7790E-01 | 1.0928E-01 |
| 2.0000E-01 | 9.6057E-01 | 2.0872E-01 | 9.8299E-01 | 2.1396E-01 |
| 3.0000E-01 | 9.3893E-01 | 3.0764E-01 | 9.8804E-01 | 3.1663E-01 |
| 4.0000E-01 | 9.0746E-01 | 4.0292E-01 | 9.9289E-01 | 4.1786E-01 |
| 5.0000E-01 | 8.6658E-01 | 4.9383E-01 | 9.9741E-01 | 5.1796E-01 |
| 6.0000E-01 | 8.1674E-01 | 5.7959E-01 | 1.0015E 00 | 6.1716E-01 |
| 7.0000E-01 | 7.5849E-01 | 6.5941E-01 | 1.0050E 00 | 7.1563E-01 |
| 8.0000E-01 | 6.9243E-01 | 7.3255E-01 | 1.0080E 00 | 8.1354E-01 |
| 9.0000E-01 | 6.1926E-01 | 7.9832E-01 | 1.0103E 00 | 9.1105E-01 |
| 1.0000E 00 | 5.3974E-01 | 8.5609E-01 | 1.0120E 00 | 1.0083E 00 |
| 1.4000E 00 | 1.7513E-01 | 9.9727E-01 | 1.0125E 00 | 1.3970E 00 |
| 2.0000E 00 | -4.0644E-01 | 9.1475E-01 | 1.0010E 00 | -1.1527E 00 |
| 2.4000E 00 | -7.2715E-01 | 6.7639E-01 | 9.9311E-01 | -7.4925E-01 |
| 3.0000E 00 | -9.8199E-01 | 1.3640E-01 | 9.9142E-01 | -1.3802E-01 |
| 3.4000E 00 | -9.6166E-01 | -2.6264E-01 | 9.9688E-01 | 2.6661E-01 |
| 4.0000E 00 | -6.5354E-01 | -7.6493E-01 | 1.0061E 00 | 8.6376E-01 |
| 4.4000E 00 | -3.1032E-01 | -9.5877E-01 | 1.0077E 00 | 1.2578E 00 |
| 5.0000E 00 | 2.7750E-01 | -9.6286E-01 | 1.0020E 00 | -1.2902E 00 |
| 6.0000E 00 | 9.5413E-01 | -2.7655E-01 | 9.9341E-01 | -2.8212E-01 |
| 7.0000E 00 | 7.5317E-01 | 6.6314E-01 | 1.0035E 00 | 7.2192E-01 |
| 8.0000E 00 | -1.4100E-01 | 9.9303E-01 | 1.0030E 00 | -1.4298E 00 |
| 9.0000E 00 | -9.0593E-01 | 4.1040E-01 | 9.9456E-01 | -4.2535E-01 |
| 1.0000E 01 | -8.3781E-01 | -5.4906E-01 | 1.0017E 00 | 5.8013E-01 |
| 1.3000E 01 | 9.0576E-01 | 4.2441E-01 | 1.0003E 00 | 4.3818E-01 |
| 1.5000E 01 | -7.5544E-01 | 6.5007E-01 | 9.9664E-01 | -7.1057E-01 |
| 1.8000E 01 | 6.5645E-01 | -7.5133E-01 | 9.9770E-01 | -8.5269E-01 |
| 2.0000E 01 | 4.0935E-01 | 9.1641E-01 | 1.0037E 00 | 1.1507E 00 |
| 2.3000E 01 | -5.3355E-01 | -8.4959E-01 | 1.0032E 00 | 1.0100E 00 |
| 2.5000E 01 | 9.8856E-01 | -1.3040E-01 | 9.9713E-01 | -1.3115E-01 |
| 2.8000E 01 | -9.5988E-01 | 2.6943E-01 | 9.9697E-01 | -2.7365E-01 |
| 3.0000E 01 | 1.5183E-01 | -9.8985E-01 | 1.0014E 00 | -1.4186E 00 |
| 3.3000E 01 | -1.1232E-02 | 1.0019E 00 | 1.0020E 00 | -1.5596E 00 |
| 3.5000E 01 | -9.0274E-01 | -4.3079E-01 | 1.0003E 00 | 4.4524E-01 |
| 4.0000E 01 | -6.6434E-01 | 7.4530E-01 | 9.9840E-01 | -8.4277E-01 |
| 4.5000E 01 | 5.2589E-01 | 8.5330E-01 | 1.0023E 00 | 1.0185E 00 |
| 5.0000E 01 | 9.6294E-01 | -2.6125E-01 | 9.9775E-01 | -2.6492E-01 |

CASE I

$\phi = 0^{\circ}$ $\psi = 185^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | 3.5422E-02 | 1.1042E 00 | 1.1048E 00 | 1.5387E 00 |
| 2.0000E-02 | 2.3564E-02 | 1.0841E 00 | 1.0843E 00 | 1.5491E 00 |
| 4.0000E-02 | 1.1679E-03 | 1.0643E 00 | 1.0643E 00 | 1.5697E 00 |
| 6.0000E-02 | -2.0548E-02 | 1.0525E 00 | 1.0527E 00 | -1.5513E 00 |
| 1.0000E-01 | -6.3034E-02 | 1.0364E 00 | 1.0383E 00 | -1.5101E 00 |
| 2.0000E-01 | -1.6626E-01 | 1.0054E 00 | 1.0190E 00 | -1.4069E 00 |
| 3.0000E-01 | -2.6614E-01 | 9.7213E-01 | 1.0079E 00 | -1.3036E 00 |
| 4.0000E-01 | -3.6243E-01 | 9.3223E-01 | 1.0002E 00 | -1.2000E 00 |
| 5.0000E-01 | -4.5445E-01 | 8.8462E-01 | 9.9452E-01 | -1.0962E 00 |
| 6.0000E-01 | -5.4144E-01 | 8.2914E-01 | 9.9027E-01 | -9.9230E-01 |
| 7.0000E-01 | -6.2265E-01 | 7.6602E-01 | 9.8716E-01 | -8.8827E-01 |
| 8.0000E-01 | -6.9733E-01 | 6.9568E-01 | 9.8501E-01 | -7.8421E-01 |
| 9.0000E-01 | -7.6478E-01 | 6.1871E-01 | 9.8371E-01 | -6.8020E-01 |
| 1.0000E 00 | -8.2436E-01 | 5.3579E-01 | 9.8317E-01 | -5.7634E-01 |
| 1.4000E 00 | -9.7388E-01 | 1.6096E-01 | 9.8709E-01 | -1.6379E-01 |
| 2.0000E 00 | -9.0560E-01 | -4.2762E-01 | 1.0015E 00 | 4.4116E-01 |
| 2.4000E 00 | -6.7639E-01 | -7.4828E-01 | 1.0087E 00 | 8.3581E-01 |
| 3.0000E 00 | -1.4722E-01 | -9.9754E-01 | 1.0083E 00 | 1.4243E 00 |
| 3.4000E 00 | 2.4754E-01 | -9.7110E-01 | 1.0022E 00 | -1.3212E 00 |
| 4.0000E 00 | 7.4851E-01 | -6.5279E-01 | 9.9318E-01 | -7.1720E-01 |
| 4.4000E 00 | 9.4464E-01 | -3.0353E-01 | 9.9221E-01 | -3.1090E-01 |
| 5.0000E 00 | 9.5554E-01 | 2.9028E-01 | 9.9866E-01 | 2.9492E-01 |
| 6.0000E 00 | 2.8281E-01 | 9.6604E-01 | 1.0066E 00 | 1.2860E 00 |
| 7.0000E 00 | -6.5073E-01 | 7.5422E-01 | 9.9615E-01 | -8.5892E-01 |
| 8.0000E 00 | -9.8595E-01 | -1.5025E-01 | 9.9733E-01 | 1.5122E-01 |
| 9.0000E 00 | -4.1415E-01 | -9.1626E-01 | 1.0055E 00 | 1.1463E 00 |
| 1.0000E 01 | 5.3889E-01 | -8.4010E-01 | 9.9809E-01 | -1.0004E 00 |
| 1.3000E 01 | -4.1585E-01 | 9.0899E-01 | 9.9959E-01 | -1.1417E 00 |
| 1.5000E 01 | -6.5067E-01 | -7.6393E-01 | 1.0035E 00 | 8.6530E-01 |
| 1.8000E 01 | 7.5078E-01 | 6.6420E-01 | 1.0024E 00 | 7.2429E-01 |
| 2.0000E 01 | -9.0951E-01 | 4.0675E-01 | 9.9632E-01 | -4.2054E-01 |
| 2.3000E 01 | 8.4287E-01 | -5.3206E-01 | 9.9676E-01 | -5.6308E-01 |
| 2.5000E 01 | 1.3438E-01 | 9.9382E-01 | 1.0029E 00 | 1.4364E 00 |
| 2.8000E 01 | -2.7246E-01 | -9.6532E-01 | 1.0030E 00 | 1.2957E 00 |
| 3.0000E 01 | 9.8628E-01 | 1.5668E-01 | 9.9865E-01 | 1.5755E-01 |
| 3.3000E 01 | -9.9793E-01 | -1.5331E-02 | 9.9805E-01 | 1.5362E-02 |
| 3.5000E 01 | 4.2555E-01 | -9.0463E-01 | 9.9973E-01 | -1.1311E 00 |
| 4.0000E 01 | -7.4499E-01 | -6.6954E-01 | 1.0016E 00 | 7.3211E-01 |
| 4.5000E 01 | -8.4852E-01 | 5.2477E-01 | 9.9768E-01 | -5.5388E-01 |
| 5.0000E 01 | 2.6355E-01 | 9.6700E-01 | 1.0023E 00 | 1.3047E 00 |

CASE I

$\phi = 0^{\circ}$ $\psi = 190^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 9.4836E-01 | 1.2754E-02 | 9.4844E-01 | 1.3448E-02 |
| 2.0000E-02 | 9.4914E-01 | 2.4607E-02 | 9.4946E-01 | 2.5919E-02 |
| 4.0000E-02 | 9.5029E-01 | 4.7489E-02 | 9.5148E-01 | 4.9931E-02 |
| 6.0000E-02 | 9.5094E-01 | 6.9773E-02 | 9.5350E-01 | 7.3242E-02 |
| 1.0000E-01 | 9.5081E-01 | 1.1329E-01 | 9.5754E-01 | 1.1859E-01 |
| 2.0000E-01 | 9.4270E-01 | 2.1828E-01 | 9.6764E-01 | 2.2753E-01 |
| 3.0000E-01 | 9.2400E-01 | 3.1902E-01 | 9.7753E-01 | 3.3245E-01 |
| 4.0000E-01 | 8.9519E-01 | 4.1549E-01 | 9.8691E-01 | 4.3455E-01 |
| 5.0000E-01 | 8.5672E-01 | 5.0715E-01 | 9.9557E-01 | 5.3449E-01 |
| 6.0000E-01 | 8.0910E-01 | 5.9333E-01 | 1.0033E 00 | 6.3274E-01 |
| 7.0000E-01 | 7.5289E-01 | 6.7332E-01 | 1.0100E 00 | 7.2967E-01 |
| 8.0000E-01 | 6.8872E-01 | 7.4642E-01 | 1.0156E 00 | 8.2558E-01 |
| 9.0000E-01 | 6.1730E-01 | 8.1197E-01 | 1.0200E 00 | 9.2077E-01 |
| 1.0000E 00 | 5.3939E-01 | 8.6936E-01 | 1.0231E 00 | 1.0155E 00 |
| 1.4000E 00 | 1.7992E-01 | 1.0079E 00 | 1.0239E 00 | 1.3942E 00 |
| 2.0000E 00 | -3.9763E-01 | 9.1960E-01 | 1.0019E 00 | -1.1627E 00 |
| 2.4000E 00 | -7.1791E-01 | 6.7716E-01 | 9.8688E-01 | -7.5620E-01 |
| 3.0000E 00 | -9.7480E-01 | 1.3210E-01 | 9.8371E-01 | -1.3469E-01 |
| 3.4000E 00 | -9.5707E-01 | -2.6907E-01 | 9.9417E-01 | 2.7407E-01 |
| 4.0000E 00 | -6.5349E-01 | -7.7225E-01 | 1.0116E 00 | 8.6850E-01 |
| 4.4000E 00 | -3.1304E-01 | -9.6522E-01 | 1.0147E 00 | 1.2572E 00 |
| 5.0000E 00 | 2.7194E-01 | -9.6637E-01 | 1.0039E 00 | -1.2965E 00 |
| 6.0000E 00 | 9.4871E-01 | -2.7395E-01 | 9.8747E-01 | -2.8112E-01 |
| 7.0000E 00 | 7.5253E-01 | 6.6868E-01 | 1.0067E 00 | 7.2647E-01 |
| 8.0000E 00 | -1.3694E-01 | 9.9632E-01 | 1.0057E 00 | -1.4342E 00 |
| 9.0000E 00 | -9.0126E-01 | 4.0883E-01 | 9.8965E-01 | -4.2586E-01 |
| 1.0000E 01 | -8.3668E-01 | -5.5360E-01 | 1.0033E 00 | 5.8453E-01 |
| 1.3000E 01 | 9.0425E-01 | 4.2822E-01 | 1.0005E 00 | 4.4228E-01 |
| 1.5000E 01 | -7.5162E-01 | 6.4986E-01 | 9.9361E-01 | -7.1291E-01 |
| 1.8000E 01 | 6.5297E-01 | -7.5161E-01 | 9.9563E-01 | -8.5552E-01 |
| 2.0000E 01 | 4.1048E-01 | 9.1953E-01 | 1.0070E 00 | 1.1509E 00 |
| 2.3000E 01 | -5.3419E-01 | -8.5261E-01 | 1.0061E 00 | 1.0111E 00 |
| 2.5000E 01 | 9.8618E-01 | -1.2863E-01 | 9.9454E-01 | -1.2970E-01 |
| 2.8000E 01 | -9.5742E-01 | 2.6809E-01 | 9.9424E-01 | -2.7302E-01 |
| 3.0000E 01 | 1.4967E-01 | -9.9147E-01 | 1.0027E 00 | -1.4210E 00 |
| 3.3000E 01 | -9.4020E-03 | 1.0038E 00 | 1.0038E 00 | -1.5614E 00 |
| 3.5000E 01 | -9.0188E-01 | -4.3314E-01 | 1.0005E 00 | 4.4774E-01 |
| 4.0000E 01 | -6.6200E-01 | 7.4545E-01 | 9.9696E-01 | -8.4462E-01 |
| 4.5000E 01 | 5.2638E-01 | 8.5546E-01 | 1.0044E 00 | 1.0192E 00 |
| 5.0000E 01 | 9.6112E-01 | -2.6022E-01 | 9.9572E-01 | -2.6441E-01 |

CASE I

$\phi = 0^{\circ}$ $\psi = 190^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | 8.6821E-02 | 1.2090E 00 | 1.2121E 00 | 1.4991E 00 |
| 2.0000E-02 | 7.1165E-02 | 1.1667E 00 | 1.1689E 00 | 1.5099E 00 |
| 4.0000E-02 | 4.4551E-02 | 1.1264E 00 | 1.1273E 00 | 1.5313E 00 |
| 6.0000E-02 | 2.0114E-02 | 1.1036E 00 | 1.1038E 00 | 1.5526E 00 |
| 1.0000E-01 | -2.6100E-02 | 1.0745E 00 | 1.0748E 00 | -1.5465E 00 |
| 2.0000E-01 | -1.3491E-01 | 1.0279E 00 | 1.0367E 00 | -1.4403E 00 |
| 3.0000E-01 | -2.3832E-01 | 9.8673E-01 | 1.0151E 00 | -1.3338E 00 |
| 4.0000E-01 | -3.3722E-01 | 9.4170E-01 | 1.0003E 00 | -1.2269E 00 |
| 5.0000E-01 | -4.3135E-01 | 8.9038E-01 | 9.8936E-01 | -1.1197E 00 |
| 6.0000E-01 | -5.2016E-01 | 8.3203E-01 | 9.8124E-01 | -1.0121E 00 |
| 7.0000E-01 | -6.0298E-01 | 7.6657E-01 | 9.7531E-01 | -9.0428E-01 |
| 8.0000E-01 | -6.7915E-01 | 6.9430E-01 | 9.7124E-01 | -7.9643E-01 |
| 9.0000E-01 | -7.4800E-01 | 6.1569E-01 | 9.6881E-01 | -6.8868E-01 |
| 1.0000E 00 | -8.0893E-01 | 5.3137E-01 | 9.6784E-01 | -5.8119E-01 |
| 1.4000E 00 | -9.6356E-01 | 1.5265E-01 | 9.7557E-01 | -1.5711E-01 |
| 2.0000E 00 | -9.0239E-01 | -4.3800E-01 | 1.0031E 00 | 4.5188E-01 |
| 2.4000E 00 | -6.7732E-01 | -7.5807E-01 | 1.0166E 00 | 8.4159E-01 |
| 3.0000E 00 | -1.5277E-01 | -1.0043E 00 | 1.0158E 00 | 1.4198E 00 |
| 3.4000E 00 | 2.4032E-01 | -9.7492E-01 | 1.0041E 00 | -1.3291E 00 |
| 4.0000E 00 | 7.4105E-01 | -6.5198E-01 | 9.8703E-01 | -7.2155E-01 |
| 4.4000E 00 | 9.3839E-01 | -3.0006E-01 | 9.8520E-01 | -3.0949E-01 |
| 5.0000E 00 | 9.5253E-01 | 2.9624E-01 | 9.9753E-01 | 3.0152E-01 |
| 6.0000E 00 | 2.8587E-01 | 9.7130E-01 | 1.0125E 00 | 1.2846E 00 |
| 7.0000E 00 | -6.4511E-01 | 7.5448E-01 | 9.9268E-01 | -8.6338E-01 |
| 8.0000E 00 | -9.8290E-01 | -1.5453E-01 | 9.9497E-01 | 1.5594E-01 |
| 9.0000E 00 | -4.1598E-01 | -9.2087E-01 | 1.0105E 00 | 1.1465E 00 |
| 1.0000E 01 | 5.3428E-01 | -8.4101E-01 | 9.9637E-01 | -1.0048E 00 |
| 1.3000E 01 | -4.1197E-01 | 9.1036E-01 | 9.9924E-01 | -1.1458E 00 |
| 1.5000E 01 | -6.5100E-01 | -7.6775E-01 | 1.0066E 00 | 8.6750E-01 |
| 1.8000E 01 | 7.5059E-01 | 6.6769E-01 | 1.0046E 00 | 7.2702E-01 |
| 2.0000E 01 | -9.0642E-01 | 4.0554E-01 | 9.9301E-01 | -4.2070E-01 |
| 2.3000E 01 | 8.3986E-01 | -5.3136E-01 | 9.9383E-01 | -5.6410E-01 |
| 2.5000E 01 | 1.3620E-01 | 9.9617E-01 | 1.0054E 00 | 1.4349E 00 |
| 2.8000E 01 | -2.7384E-01 | -9.6776E-01 | 1.0058E 00 | 1.2950E 00 |
| 3.0000E 01 | 9.8469E-01 | 1.5888E-01 | 9.9743E-01 | 1.5997E-01 |
| 3.3000E 01 | -9.9614E-01 | -1.7190E-02 | 9.9628E-01 | 1.7255E-02 |
| 3.5000E 01 | 4.2318E-01 | -9.0547E-01 | 9.9948E-01 | -1.1336E 00 |
| 4.0000E 01 | -7.4487E-01 | -6.7188E-01 | 1.0031E 00 | 7.3392E-01 |
| 4.5000E 01 | -8.4637E-01 | 5.2425E-01 | 9.9558E-01 | -5.5457E-01 |
| 5.0000E 01 | 2.6460E-01 | 9.6881E-01 | 1.0043E 00 | 1.3042E 00 |

CASE I

$\phi = 0^{\circ}$ $\psi = 200^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 9.0239E-01 | 1.5723E-02 | 9.0253E-01 | 1.7422E-02 |
| 2.0000E-02 | 9.0429E-01 | 2.9377E-02 | 9.0477E-01 | 3.2475E-02 |
| 4.0000E-02 | 9.0740E-01 | 5.4939E-02 | 9.0906E-01 | 6.0471E-02 |
| 6.0000E-02 | 9.0979E-01 | 7.9281E-02 | 9.1324E-01 | 8.6923E-02 |
| 1.0000E-01 | 9.1278E-01 | 1.2593E-01 | 9.2142E-01 | 1.3710E-01 |
| 2.0000E-01 | 9.1120E-01 | 2.3595E-01 | 9.4125E-01 | 2.5338E-01 |
| 3.0000E-01 | 8.9798E-01 | 3.3971E-01 | 9.6009E-01 | 3.6166E-01 |
| 4.0000E-01 | 8.7398E-01 | 4.3808E-01 | 9.7763E-01 | 4.6464E-01 |
| 5.0000E-01 | 8.3983E-01 | 5.3089E-01 | 9.9356E-01 | 5.6372E-01 |
| 6.0000E-01 | 7.9614E-01 | 6.1768E-01 | 1.0076E 00 | 6.5983E-01 |
| 7.0000E-01 | 7.4352E-01 | 6.9783E-01 | 1.0197E 00 | 7.5371E-01 |
| 8.0000E-01 | 6.8266E-01 | 7.7075E-01 | 1.0296E 00 | 8.4593E-01 |
| 9.0000E-01 | 6.1427E-01 | 8.3583E-01 | 1.0373E 00 | 9.3701E-01 |
| 1.0000E 00 | 5.3914E-01 | 8.9250E-01 | 1.0427E 00 | 1.0274E 00 |
| 1.4000E 00 | 1.8848E-01 | 1.0263E 00 | 1.0435E 00 | 1.3892E 00 |
| 2.0000E 00 | -3.8228E-01 | 9.2782E-01 | 1.0035E 00 | -1.1800E 00 |
| 2.4000E 00 | -7.0191E-01 | 6.7833E-01 | 9.7612E-01 | -7.6831E-01 |
| 3.0000E 00 | -9.6245E-01 | 1.2456E-01 | 9.7047E-01 | -1.2871E-01 |
| 3.4000E 00 | -9.4922E-01 | -2.8024E-01 | 9.8972E-01 | 2.8707E-01 |
| 4.0000E 00 | -6.5347E-01 | -7.8487E-01 | 1.0213E 00 | 8.7650E-01 |
| 4.4000E 00 | -3.1779E-01 | -9.7630E-01 | 1.0267E 00 | 1.2561E 00 |
| 5.0000E 00 | 2.6232E-01 | -9.7237E-01 | 1.0071E 00 | -1.3073E 00 |
| 6.0000E 00 | 9.3938E-01 | -2.6942E-01 | 9.7725E-01 | -2.7931E-01 |
| 7.0000E 00 | 7.5145E-01 | 6.7824E-01 | 1.0123E 00 | 7.3424E-01 |
| 8.0000E 00 | -1.2992E-01 | 1.0020E 00 | 1.0104E 00 | -1.4418E 00 |
| 9.0000E 00 | -8.9321E-01 | 4.0611E-01 | 9.8120E-01 | -4.2672E-01 |
| 1.0000E 01 | -8.3476E-01 | -5.6143E-01 | 1.0060E 00 | 5.9208E-01 |
| 1.3000E 01 | 9.0165E-01 | 4.3481E-01 | 1.0010E 00 | 4.4933E-01 |
| 1.5000E 01 | -7.4505E-01 | 6.4949E-01 | 9.8840E-01 | -7.1698E-01 |
| 1.8000E 01 | 6.4697E-01 | -7.5210E-01 | 9.9208E-01 | -8.6040E-01 |
| 2.0000E 01 | 4.1243E-01 | 9.2489E-01 | 1.0127E 00 | 1.1513E 00 |
| 2.3000E 01 | -5.3530E-01 | -8.5782E-01 | 1.0111E 00 | 1.0129E 00 |
| 2.5000E 01 | 9.8209E-01 | -1.2558E-01 | 9.9008E-01 | -1.2718E-01 |
| 2.8000E 01 | -9.5318E-01 | 2.6577E-01 | 9.8954E-01 | -2.7192E-01 |
| 3.0000E 01 | 1.4593E-01 | -9.9425E-01 | 1.0049E 00 | -1.4251E 00 |
| 3.3000E 01 | -6.1781E-03 | 1.0069E 00 | 1.0069E 00 | -1.5647E 00 |
| 3.5000E 01 | -9.0039E-01 | -4.3720E-01 | 1.0009E 00 | 4.5203E-01 |
| 4.0000E 01 | -6.5797E-01 | 7.4570E-01 | 9.9448E-01 | -8.4782E-01 |
| 4.5000E 01 | 5.2723E-01 | 8.5917E-01 | 1.0080E 00 | 1.0204E 00 |
| 5.0000E 01 | 9.5797E-01 | -2.5844E-01 | 9.9222E-01 | -2.6351E-01 |

CASE I

$\phi = 0^{\circ}$ $\psi = 200^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | 2.0600E-01 | 1.4172E 00 | 1.4321E 00 | 1.4264E 00 |
| 2.0000E-02 | 1.7659E-01 | 1.3254E 00 | 1.3371E 00 | 1.4383E 00 |
| 4.0000E-02 | 1.3619E-01 | 1.2416E 00 | 1.2491E 00 | 1.4615E 00 |
| 6.0000E-02 | 1.0360E-01 | 1.1961E 00 | 1.2006E 00 | 1.4844E 00 |
| 1.0000E-01 | 4.7036E-02 | 1.1415E 00 | 1.1425E 00 | 1.5296E 00 |
| 2.0000E-01 | -7.5793E-02 | 1.0658E 00 | 1.0685E 00 | -1.4998E 00 |
| 3.0000E-01 | -1.8724E-01 | 1.0105E 00 | 1.0277E 00 | -1.3876E 00 |
| 4.0000E-01 | -2.9175E-01 | 9.5655E-01 | 1.0001E 00 | -1.2748E 00 |
| 5.0000E-01 | -3.9022E-01 | 8.9891E-01 | 9.7996E-01 | -1.1612E 00 |
| 6.0000E-01 | -4.8261E-01 | 8.3573E-01 | 9.6507E-01 | -1.0471E 00 |
| 7.0000E-01 | -5.6855E-01 | 7.6641E-01 | 9.5427E-01 | -9.3254E-01 |
| 8.0000E-01 | -6.4751E-01 | 6.9093E-01 | 9.4692E-01 | -8.1783E-01 |
| 9.0000E-01 | -7.1896E-01 | 6.0962E-01 | 9.4262E-01 | -7.0329E-01 |
| 1.0000E 00 | -7.8233E-01 | 5.2299E-01 | 9.4104E-01 | -5.8927E-01 |
| 1.4000E 00 | -9.4598E-01 | 1.3790E-01 | 9.5598E-01 | -1.4476E-01 |
| 2.0000E 00 | -8.9710E-01 | -4.5600E-01 | 1.0063E 00 | 4.7027E-01 |
| 2.4000E 00 | -6.7912E-01 | -7.7495E-01 | 1.0304E 00 | 8.5120E-01 |
| 3.0000E 00 | -1.6244E-01 | -1.0158E 00 | 1.0287E 00 | 1.4122E 00 |
| 3.4000E 00 | 2.2781E-01 | -9.8140E-01 | 1.0075E 00 | -1.3427E 00 |
| 4.0000E 00 | 7.2820E-01 | -6.5048E-01 | 9.7642E-01 | -7.2908E-01 |
| 4.4000E 00 | 9.2767E-01 | -2.9403E-01 | 9.7315E-01 | -3.0694E-01 |
| 5.0000E 00 | 9.4739E-01 | 3.0656E-01 | 9.9575E-01 | 3.1295E-01 |
| 6.0000E 00 | 2.9120E-01 | 9.8034E-01 | 1.0227E 00 | 1.2821E 00 |
| 7.0000E 00 | -6.3542E-01 | 7.5489E-01 | 9.8672E-01 | -8.7112E-01 |
| 8.0000E 00 | -9.7766E-01 | -1.6192E-01 | 9.9098E-01 | 1.6414E-01 |
| 9.0000E 00 | -4.1915E-01 | -9.2879E-01 | 1.0190E 00 | 1.1469E 00 |
| 1.0000E 01 | 5.2633E-01 | -8.4255E-01 | 9.9344E-01 | -1.0124E 00 |
| 1.3000E 01 | -4.0527E-01 | 9.1271E-01 | 9.9864E-01 | -1.1529E 00 |
| 1.5000E 01 | -6.5160E-01 | -7.7433E-01 | 1.0120E 00 | 8.7126E-01 |
| 1.8000E 01 | 7.5026E-01 | 6.7371E-01 | 1.0084E 00 | 7.3169E-01 |
| 2.0000E 01 | -9.0110E-01 | 4.0345E-01 | 9.8730E-01 | -4.2097E-01 |
| 2.3000E 01 | 8.3467E-01 | -5.3013E-01 | 9.8880E-01 | -5.6586E-01 |
| 2.5000E 01 | 1.3933E-01 | 1.0002E 00 | 1.0099E 00 | 1.4324E 00 |
| 2.8000E 01 | -2.7623E-01 | -9.7196E-01 | 1.0104E 00 | 1.2939E 00 |
| 3.0000E 01 | 9.8197E-01 | 1.6267E-01 | 9.9535E-01 | 1.6416E-01 |
| 3.3000E 01 | -9.9299E-01 | -2.0374E-02 | 9.9319E-01 | 2.0515E-02 |
| 3.5000E 01 | 4.1911E-01 | -9.0690E-01 | 9.9906E-01 | -1.1379E 00 |
| 4.0000E 01 | -7.4467E-01 | -6.7592E-01 | 1.0057E 00 | 7.3704E-01 |
| 4.5000E 01 | -8.4267E-01 | 5.2336E-01 | 9.9196E-01 | -5.5577E-01 |
| 5.0000E 01 | 2.6641E-01 | 9.7194E-01 | 1.0078E 00 | 1.3033E 00 |

CASE I

$\phi = 0^{\circ}$ $\psi = 210^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 8.6130E-01 | 1.8848E-02 | 8.6150E-01 | 2.1879E-02 |
| 2.0000E-02 | 8.6446E-01 | 3.4218E-02 | 8.6513E-01 | 3.9562E-02 |
| 4.0000E-02 | 8.6965E-01 | 6.2223E-02 | 8.7187E-01 | 7.1428E-02 |
| 6.0000E-02 | 8.7383E-01 | 8.8378E-02 | 8.7829E-01 | 1.0080E-01 |
| 1.0000E-01 | 8.7989E-01 | 1.3770E-01 | 8.9060E-01 | 1.5524E-01 |
| 2.0000E-01 | 8.8445E-01 | 2.5181E-01 | 9.1960E-01 | 2.7737E-01 |
| 3.0000E-01 | 8.7616E-01 | 3.5792E-01 | 9.4645E-01 | 3.8782E-01 |
| 4.0000E-01 | 8.5639E-01 | 4.5770E-01 | 9.7103E-01 | 4.9083E-01 |
| 5.0000E-01 | 8.2597E-01 | 5.5132E-01 | 9.9307E-01 | 5.8857E-01 |
| 6.0000E-01 | 7.8563E-01 | 6.3847E-01 | 1.0124E 00 | 6.8243E-01 |
| 7.0000E-01 | 7.3605E-01 | 7.1865E-01 | 1.0287E 00 | 7.7344E-01 |
| 8.0000E-01 | 6.7796E-01 | 7.9132E-01 | 1.0420E 00 | 8.6240E-01 |
| 9.0000E-01 | 6.1210E-01 | 8.5591E-01 | 1.0523E 00 | 9.4998E-01 |
| 1.0000E 00 | 5.3927E-01 | 9.1190E-01 | 1.0594E 00 | 1.0367E 00 |
| 1.4000E 00 | 1.9586E-01 | 1.0415E 00 | 1.0598E 00 | 1.3849E 00 |
| 2.0000E 00 | -3.6942E-01 | 9.3451E-01 | 1.0049E 00 | -1.1943E 00 |
| 2.4000E 00 | -6.8859E-01 | 6.7916E-01 | 9.6717E-01 | -7.7850E-01 |
| 3.0000E 00 | -9.5223E-01 | 1.1821E-01 | 9.5954E-01 | -1.2351E-01 |
| 3.4000E 00 | -9.4277E-01 | -2.8956E-01 | 9.8623E-01 | 2.9799E-01 |
| 4.0000E 00 | -6.5354E-01 | -7.9536E-01 | 1.0294E 00 | 8.8297E-01 |
| 4.4000E 00 | -3.2180E-01 | -9.8548E-01 | 1.0367E 00 | 1.2552E 00 |
| 5.0000E 00 | 2.5431E-01 | -9.7731E-01 | 1.0099E 00 | -1.3162E 00 |
| 6.0000E 00 | 9.3165E-01 | -2.6563E-01 | 9.6878E-01 | -2.7775E-01 |
| 7.0000E 00 | 7.5059E-01 | 6.8617E-01 | 1.0170E 00 | 7.4059E-01 |
| 8.0000E 00 | -1.2409E-01 | 1.0066E 00 | 1.0142E 00 | -1.4481E 00 |
| 9.0000E 00 | -8.8655E-01 | 4.0382E-01 | 9.7419E-01 | -4.2742E-01 |
| 1.0000E 01 | -8.3318E-01 | -5.6793E-01 | 1.0083E 00 | 5.9830E-01 |
| 1.3000E 01 | 8.9951E-01 | 4.4027E-01 | 1.0015E 00 | 4.5518E-01 |
| 1.5000E 01 | -7.3959E-01 | 6.4917E-01 | 9.8408E-01 | -7.2038E-01 |
| 1.8000E 01 | 6.4199E-01 | -7.5250E-01 | 9.8915E-01 | -8.6448E-01 |
| 2.0000E 01 | 4.1406E-01 | 9.2934E-01 | 1.0174E 00 | 1.1517E 00 |
| 2.3000E 01 | -5.3623E-01 | -8.6213E-01 | 1.0153E 00 | 1.0144E 00 |
| 2.5000E 01 | 9.7869E-01 | -1.2304E-01 | 9.8640E-01 | -1.2507E-01 |
| 2.8000E 01 | -9.4967E-01 | 2.6385E-01 | 9.8564E-01 | -2.7100E-01 |
| 3.0000E 01 | 1.4283E-01 | -9.9656E-01 | 1.0067E 00 | -1.4284E 00 |
| 3.3000E 01 | -3.6263E-03 | 1.0095E 00 | 1.0095E 00 | -1.5672E 00 |
| 3.5000E 01 | -8.9916E-01 | -4.4056E-01 | 1.0013E 00 | 4.5559E-01 |
| 4.0000E 01 | -6.5462E-01 | 7.4591E-01 | 9.9243E-01 | -8.5049E-01 |
| 4.5000E 01 | 5.2794E-01 | 8.6225E-01 | 1.0110E 00 | 1.0214E 00 |
| 5.0000E 01 | 9.5536E-01 | -2.5697E-01 | 9.8932E-01 | -2.6276E-01 |

CASE I

$\phi = 0^{\circ}$ $\psi = 210^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | 3.4405E-01 | 1.6200E 00 | 1.6562E 00 | 1.3615E 00 |
| 2.0000E-02 | 2.9254E-01 | 1.4737E 00 | 1.5024E 00 | 1.3748E 00 |
| 4.0000E-02 | 2.3167E-01 | 1.3445E 00 | 1.3643E 00 | 1.4002E 00 |
| 6.0000E-02 | 1.8781E-01 | 1.2765E 00 | 1.2902E 00 | 1.4247E 00 |
| 1.0000E-01 | 1.1781E-01 | 1.1976E 00 | 1.2034E 00 | 1.4727E 00 |
| 2.0000E-01 | -2.1689E-02 | 1.0959E 00 | 1.0961E 00 | -1.5510E 00 |
| 3.0000E-01 | -1.4192E-01 | 1.0285E 00 | 1.0382E 00 | -1.4337E 00 |
| 4.0000E-01 | -2.5221E-01 | 9.6728E-01 | 9.9962E-01 | -1.3157E 00 |
| 5.0000E-01 | -3.5496E-01 | 9.0456E-01 | 9.7171E-01 | -1.1968E 00 |
| 6.0000E-01 | -4.5076E-01 | 8.3754E-01 | 9.5113E-01 | -1.0771E 00 |
| 7.0000E-01 | -5.3957E-01 | 7.6517E-01 | 9.3628E-01 | -9.5661E-01 |
| 8.0000E-01 | -6.2106E-01 | 6.8718E-01 | 9.2625E-01 | -8.3590E-01 |
| 9.0000E-01 | -6.9479E-01 | 6.0375E-01 | 9.2046E-01 | -7.1540E-01 |
| 1.0000E 00 | -7.6030E-01 | 5.1532E-01 | 9.1848E-01 | -5.9566E-01 |
| 1.4000E 00 | -9.3162E-01 | 1.2530E-01 | 9.4001E-01 | -1.3370E-01 |
| 2.0000E 00 | -8.9295E-01 | -4.7102E-01 | 1.0096E 00 | 4.8539E-01 |
| 2.4000E 00 | -6.8083E-01 | -7.8893E-01 | 1.0421E 00 | 8.5882E-01 |
| 3.0000E 00 | -1.7056E-01 | -1.0253E 00 | 1.0394E 00 | 1.4060E 00 |
| 3.4000E 00 | 2.1739E-01 | -9.8667E-01 | 1.0103E 00 | -1.3539E 00 |
| 4.0000E 00 | 7.1756E-01 | -6.4915E-01 | 9.6762E-01 | -7.3539E-01 |
| 4.4000E 00 | 9.1881E-01 | -2.8896E-01 | 9.6318E-01 | -3.0470E-01 |
| 5.0000E 00 | 9.4319E-01 | 3.1513E-01 | 9.9444E-01 | 3.2245E-01 |
| 6.0000E 00 | 2.9565E-01 | 9.8781E-01 | 1.0311E 00 | 1.2800E 00 |
| 7.0000E 00 | -6.2739E-01 | 7.5520E-01 | 9.8180E-01 | -8.7758E-01 |
| 8.0000E 00 | -9.7334E-01 | -1.6807E-01 | 9.8774E-01 | 1.7099E-01 |
| 9.0000E 00 | -4.2181E-01 | -9.3535E-01 | 1.0261E 00 | 1.1471E 00 |
| 1.0000E 01 | 5.1974E-01 | -8.4381E-01 | 9.9103E-01 | -1.0187E 00 |
| 1.3000E 01 | -3.9971E-01 | 9.1464E-01 | 9.9817E-01 | -1.1588E 00 |
| 1.5000E 01 | -6.5210E-01 | -7.7978E-01 | 1.0165E 00 | 8.7433E-01 |
| 1.8000E 01 | 7.5000E-01 | 6.7870E-01 | 1.0115E 00 | 7.3553E-01 |
| 2.0000E 01 | -8.9669E-01 | 4.0171E-01 | 9.8257E-01 | -4.2118E-01 |
| 2.3000E 01 | 8.3038E-01 | -5.2911E-01 | 9.8462E-01 | -5.6732E-01 |
| 2.5000E 01 | 1.4193E-01 | 1.0035E 00 | 1.0135E 00 | 1.4303E 00 |
| 2.8000E 01 | -2.7822E-01 | -9.7543E-01 | 1.0143E 00 | 1.2930E 00 |
| 3.0000E 01 | 9.7971E-01 | 1.6581E-01 | 9.9364E-01 | 1.6765E-01 |
| 3.3000E 01 | -9.9050E-01 | -2.3054E-02 | 9.9076E-01 | 2.3271E-02 |
| 3.5000E 01 | 4.1573E-01 | -9.0808E-01 | 9.9872E-01 | -1.1415E 00 |
| 4.0000E 01 | -7.4450E-01 | -6.7926E-01 | 1.0078E 00 | 7.3961E-01 |
| 4.5000E 01 | -8.3960E-01 | 5.2261E-01 | 9.8896E-01 | -5.5677E-01 |
| 5.0000E 01 | 2.6791E-01 | 9.7454E-01 | 1.0107E 00 | 1.3025E 00 |

CASE II

$\phi = 180^{\circ}$ $\psi = 185^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 1.0.0000E-03 | 9.7244E-01 | -1.1300E-02 | 9.7251E-01 | -1.1619E-02 |
| 2.0000E-02 | 9.7181E-01 | -2.2173E-02 | 9.7207E-01 | -2.2812E-02 |
| 4.0000E-02 | 9.7025E-01 | -4.3493E-02 | 9.7122E-01 | -4.4797E-02 |
| 6.0000E-02 | 9.6827E-01 | -6.4476E-02 | 9.7042E-01 | -6.6490E-02 |
| 1.0000E-01 | 9.6310E-01 | -1.0577E-01 | 9.6889E-01 | -1.0938E-01 |
| 2.0000E-01 | 9.4320E-01 | -2.0604E-01 | 9.6544E-01 | -2.1507E-01 |
| 3.0000E-01 | 9.1362E-01 | -3.0234E-01 | 9.6234E-01 | -3.1958E-01 |
| 4.0000E-01 | 8.7477E-01 | -3.9423E-01 | 9.5950E-01 | -4.2340E-01 |
| 5.0000E-01 | 8.2715E-01 | -4.8104E-01 | 9.5685E-01 | -5.2675E-01 |
| 6.0000E-01 | 7.7130E-01 | -5.6207E-01 | 9.5437E-01 | -6.2975E-01 |
| 7.0000E-01 | 7.0786E-01 | -6.3663E-01 | 9.5203E-01 | -7.3247E-01 |
| 8.0000E-01 | 6.3750E-01 | -7.0407E-01 | 9.4980E-01 | -8.3498E-01 |
| 9.0000E-01 | 5.6099E-01 | -7.6379E-01 | 9.4767E-01 | -9.3730E-01 |
| 1.0000E 00 | 4.7913E-01 | -8.1527E-01 | 9.4563E-01 | -1.0395E 00 |
| 1.4000E 00 | 1.1585E-01 | -9.3103E-01 | 9.3821E-01 | -1.4470E 00 |
| 2.0000E 00 | -4.3312E-01 | -8.2149E-01 | 9.2867E-01 | 1.0856E 00 |
| 2.4000E 00 | -7.1740E-01 | -5.8084E-01 | 9.2306E-01 | 6.8060E-01 |
| 3.0000E 00 | -9.1295E-01 | -6.7785E-02 | 9.1546E-01 | 7.4113E-02 |
| 3.4000E 00 | -8.6177E-01 | 2.9488E-01 | 9.1082E-01 | -3.2970E-01 |
| 4.0000E 00 | -5.3718E-01 | 7.2757E-01 | 9.0439E-01 | -9.3482E-01 |
| 4.4000E 00 | -2.0780E-01 | 8.7608E-01 | 9.0039E-01 | -1.3379E 00 |
| 5.0000E 00 | 3.2469E-01 | 8.3377E-01 | 8.9476E-01 | 1.1994E 00 |
| 6.0000E 00 | 8.6969E-01 | 1.7016E-01 | 8.8618E-01 | 1.9321E-01 |
| 7.0000E 00 | 6.0426E-01 | -6.3754E-01 | 8.7840E-01 | -8.1219E-01 |
| 8.0000E 00 | -2.1231E-01 | -8.4501E-01 | 8.7128E-01 | 1.3246E 00 |
| 9.0000E 00 | -8.2069E-01 | -2.7232E-01 | 8.6469E-01 | 3.2039E-01 |
| 1.0000E 01 | -6.6572E-01 | 5.4214E-01 | 8.5855E-01 | -6.8344E-01 |
| 1.3000E 01 | 7.1744E-01 | -4.4123E-01 | 8.4226E-01 | -5.5139E-01 |
| 1.5000E 01 | -6.9428E-01 | -4.5990E-01 | 8.3278E-01 | 5.8506E-01 |
| 1.8000E 01 | 6.1645E-01 | 5.4092E-01 | 8.2012E-01 | 7.2023E-01 |
| 2.0000E 01 | 2.3034E-01 | -7.7918E-01 | 8.1251E-01 | -1.2834E 00 |
| 2.3000E 01 | -3.3030E-01 | 7.3095E-01 | 8.0212E-01 | -1.1464E 00 |
| 2.5000E 01 | 7.9573E-01 | -5.9057E-03 | 7.9576E-01 | -7.4215E-03 |
| 2.8000E 01 | -7.8022E-01 | -1.0260E-01 | 7.8694E-01 | 1.3075E-01 |
| 3.0000E 01 | 2.3127E-01 | 7.4647E-01 | 7.8148E-01 | 1.2704E 00 |
| 3.3000E 01 | -1.2439E-01 | -7.6377E-01 | 7.7383E-01 | 1.4094E 00 |
| 3.5000E 01 | -6.3812E-01 | 4.2925E-01 | 7.6906E-01 | -5.9216E-01 |
| 4.0000E 01 | -5.8570E-01 | -4.8131E-01 | 7.5809E-01 | 6.8787E-01 |
| 4.5000E 01 | 2.8990E-01 | -6.8986E-01 | 7.4830E-01 | -1.1730E 00 |
| 5.0000E 01 | 7.3513E-01 | 7.9969E-02 | 7.3946E-01 | 1.0836E-01 |

CASE II

$\phi = 180^{\circ}$ $\psi = 185^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | -5.8069E-02 | -1.0991E 00 | 1.1006E 00 | 1.5180E 00 |
| 2.0000E-02 | -6.8078E-02 | -1.0780E 00 | 1.0802E 00 | 1.5077E 00 |
| 4.0000E-02 | -8.8505E-02 | -1.0563E 00 | 1.0600E 00 | 1.4872E 00 |
| 6.0000E-02 | -1.0892E-01 | -1.0427E 00 | 1.0483E 00 | 1.4667E 00 |
| 1.0000E-01 | -1.4939E-01 | -1.0229E 00 | 1.0338E 00 | 1.4258E 00 |
| 2.0000E-01 | -2.4808E-01 | -9.8321E-01 | 1.0140E 00 | 1.3236E 00 |
| 3.0000E-01 | -3.4288E-01 | -9.4191E-01 | 1.0024E 00 | 1.2217E 00 |
| 4.0000E-01 | -4.3320E-01 | -8.9463E-01 | 9.9400E-01 | 1.1199E 00 |
| 5.0000E-01 | -5.1833E-01 | -8.4039E-01 | 9.8738E-01 | 1.0181E 00 |
| 6.0000E-01 | -5.9757E-01 | -7.7909E-01 | 9.8187E-01 | 9.1650E-01 |
| 7.0000E-01 | -6.7022E-01 | -7.1104E-01 | 9.7712E-01 | 8.1494E-01 |
| 8.0000E-01 | -7.3564E-01 | -6.3673E-01 | 9.7293E-01 | 7.1346E-01 |
| 9.0000E-01 | -7.9324E-01 | -5.5681E-01 | 9.6916E-01 | 6.1203E-01 |
| 1.0000E 00 | -8.4252E-01 | -4.7200E-01 | 9.6573E-01 | 5.1066E-01 |
| 1.4000E 00 | -9.4897E-01 | -1.0063E-01 | 9.5429E-01 | 1.0565E-01 |
| 2.0000E 00 | -8.2560E-01 | 4.5189E-01 | 9.4117E-01 | -5.0080E-01 |
| 2.4000E 00 | -5.7722E-01 | 7.3427E-01 | 9.3399E-01 | -9.0458E-01 |
| 3.0000E 00 | -5.6513E-02 | 9.2294E-01 | 9.2467E-01 | -1.5096E 00 |
| 3.4000E 00 | 3.0818E-01 | 8.6597E-01 | 9.1917E-01 | -1.2289E 00 |
| 4.0000E 00 | 7.3951E-01 | 5.3323E-01 | 9.1171E-01 | 6.2472E-01 |
| 4.4000E 00 | 8.8486E-01 | 1.9987E-01 | 9.0715E-01 | 2.2215E-01 |
| 5.0000E 00 | 8.3609E-01 | -3.3531E-01 | 9.0082E-01 | -3.8141E-01 |
| 6.0000E 00 | 1.6314E-01 | -8.7628E-01 | 8.9133E-01 | -1.3867E 00 |
| 7.0000E 00 | -6.4588E-01 | -6.0193E-01 | 8.8288E-01 | 7.5019E-01 |
| 8.0000E 00 | -8.4714E-01 | 2.1990E-01 | 8.7522E-01 | -2.5398E-01 |
| 9.0000E 00 | -2.6739E-01 | 8.2599E-01 | 8.6819E-01 | -1.2577E 00 |
| 1.0000E 01 | 5.4872E-01 | 6.6440E-01 | 8.6169E-01 | 8.8047E-01 |
| 1.3000E 01 | -4.4671E-01 | -7.1683E-01 | 8.4462E-01 | 1.0135E 00 |
| 1.5000E 01 | -4.5724E-01 | 6.9842E-01 | 8.3478E-01 | -9.9114E-01 |
| 1.8000E 01 | 5.3898E-01 | -6.2024E-01 | 8.2171E-01 | -8.5538E-01 |
| 2.0000E 01 | -7.8153E-01 | -2.2722E-01 | 8.1389E-01 | 2.8294E-01 |
| 2.3000E 01 | 7.3333E-01 | 3.2777E-01 | 8.0324E-01 | 4.2033E-01 |
| 2.5000E 01 | -8.9910E-03 | -7.9670E-01 | 7.9675E-01 | 1.5595E 00 |
| 2.8000E 01 | -9.9920E-02 | 7.8140E-01 | 7.8777E-01 | -1.4436E 00 |
| 3.0000E 01 | 7.4639E-01 | -2.3402E-01 | 7.8222E-01 | -3.0383E-01 |
| 3.3000E 01 | -7.6399E-01 | 1.2690E-01 | 7.7445E-01 | -1.6460E-01 |
| 3.5000E 01 | 4.3149E-01 | 6.3728E-01 | 7.6961E-01 | 9.7561E-01 |
| 4.0000E 01 | -4.7998E-01 | 5.8734E-01 | 7.5851E-01 | -8.8565E-01 |
| 4.5000E 01 | -6.9087E-01 | -2.8831E-01 | 7.4862E-01 | 3.9535E-01 |
| 5.0000E 01 | 7.8323E-02 | -7.3555E-01 | 7.3970E-01 | -1.4647E 00 |

CASE II

$\phi = 180^{\circ}$ $\psi = 185^{\circ}$

| X | RE(EP) | IM(EP) | EP(AMP) | PHASE(EP) |
|---|---|---|---|---|
| 10.0000E-03 | 5.0882E-03 | 9.3475E-02 | 9.3613E-02 | 1.5164E 00 |
| 2.0000E-02 | 6.0451E-03 | 9.1633E-02 | 9.1833E-02 | 1.5049E 00 |
| 4.0000E-02 | 7.9537E-03 | 8.9694E-02 | 9.0046E-02 | 1.4824E 00 |
| 6.0000E-02 | 9.8312E-03 | 8.8441E-02 | 8.8985E-02 | 1.4601E 00 |
| 1.0000E-01 | 1.3500E-02 | 8.6569E-02 | 8.7615E-02 | 1.4161E 00 |
| 2.0000E-01 | 2.2265E-02 | 8.2699E-02 | 8.5643E-02 | 1.3078E 00 |
| 3.0000E-01 | 3.0513E-02 | 7.8683E-02 | 8.4392E-02 | 1.2009E 00 |
| 4.0000E-01 | 3.8240E-02 | 7.4162E-02 | 8.3440E-02 | 1.0947E 00 |
| 5.0000E-01 | 4.5409E-02 | 6.9066E-02 | 8.2657E-02 | 9.8918E-01 |
| 6.0000E-01 | 5.1977E-02 | 6.3399E-02 | 8.1982E-02 | 8.8408E-01 |
| 7.0000E-01 | 5.7895E-02 | 5.7197E-02 | 8.1384E-02 | 7.7933E-01 |
| 8.0000E-01 | 6.3122E-02 | 5.0511E-02 | 8.0843E-02 | 6.7487E-01 |
| 9.0000E-01 | 6.7617E-02 | 4.3403E-02 | 8.0348E-02 | 5.7066E-01 |
| 1.0000E 00 | 7.1347E-02 | 3.5942E-02 | 7.9889E-02 | 4.6665E-01 |
| 1.4000E 00 | 7.8204E-02 | 4.0928E-03 | 7.8311E-02 | 5.2287E-02 |
| 2.0000E 00 | 6.4517E-02 | -4.0974E-02 | 7.6428E-02 | -5.6582E-01 |
| 2.4000E 00 | 4.2212E-02 | -6.2440E-02 | 7.5369E-02 | -9.7633E-01 |
| 3.0000E 00 | -1.4531E-03 | -7.3962E-02 | 7.3976E-02 | 1.5512E 00 |
| 3.4000E 00 | -3.0371E-02 | -6.6541E-02 | 7.3144E-02 | 1.1426E 00 |
| 4.0000E 00 | -6.2098E-02 | -3.6454E-02 | 7.2008E-02 | 5.3083E-01 |
| 4.4000E 00 | -7.0766E-02 | -8.7875E-03 | 7.1310E-02 | 1.2354E-01 |
| 5.0000E 00 | -6.2170E-02 | 3.2896E-02 | 7.0337E-02 | -4.8668E-01 |
| 6.0000E 00 | -4.7236E-03 | 6.8710E-02 | 6.8873E-02 | -1.5022E 00 |
| 7.0000E 00 | 5.4771E-02 | 3.9558E-02 | 6.7562E-02 | 6.2550E-01 |
| 8.0000E 00 | 6.1459E-02 | -2.5063E-02 | 6.6373E-02 | -3.8721E-01 |
| 9.0000E 00 | 1.1166E-02 | -6.4318E-02 | 6.5280E-02 | -1.3989E 00 |
| 1.0000E 01 | -4.7813E-02 | -4.2947E-02 | 6.4269E-02 | 7.3183E-01 |
| 1.3000E 01 | 4.0900E-02 | 4.6073E-02 | 6.1608E-02 | 8.4481E-01 |
| 1.5000E 01 | 2.3342E-02 | -5.5353E-02 | 6.0073E-02 | -1.1717E 00 |
| 1.8000E 01 | -2.8768E-02 | 5.0400E-02 | 5.8032E-02 | -1.0521E 00 |
| 2.0000E 01 | 5.6646E-02 | 4.3320E-03 | 5.6811E-02 | 7.6326E-02 |
| 2.3000E 01 | -5.4048E-02 | -1.0957E-02 | 5.5147E-02 | 2.0002E-01 |
| 2.5000E 01 | 1.2872E-02 | 5.2579E-02 | 5.4131E-02 | 1.3307E 00 |
| 2.8000E 01 | -5.9762E-03 | -5.2385E-02 | 5.2725E-02 | 1.4572E 00 |
| 3.0000E 01 | -4.4149E-02 | 2.7197E-02 | 5.1854E-02 | -5.5212E-01 |
| 3.3000E 01 | 4.6162E-02 | -2.0811E-02 | 5.0636E-02 | -4.2354E-01 |
| 3.5000E 01 | -3.7826E-02 | -3.2508E-02 | 4.9875E-02 | 7.0994E-01 |
| 4.0000E 01 | 1.8908E-02 | -4.4258E-02 | 4.8128E-02 | -1.1671E 00 |
| 4.5000E 01 | 4.6333E-02 | 4.6289E-03 | 4.6564E-02 | 9.9573E-02 |
| 5.0000E 01 | 9.1002E-03 | 4.4226E-02 | 4.5152E-02 | 1.3679E 00 |

CASE II

$\phi = 180^{\circ}$ $\psi = 190^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 9.4626E-01 | -1.2566E-02 | 9.4634E-01 | -1.3279E-02 |
| 2.0000E-02 | 9.4511E-01 | -2.4217E-02 | 9.4542E-01 | -2.5618E-02 |
| 4.0000E-02 | 9.4253E-01 | -4.6642E-02 | 9.4368E-01 | -4.9445E-02 |
| 6.0000E-02 | 9.3957E-01 | -6.8392E-02 | 9.4205E-01 | -7.2663E-02 |
| 1.0000E-01 | 9.3247E-01 | -1.1062E-01 | 9.3901E-01 | -1.1808E-01 |
| 2.0000E-01 | 9.0800E-01 | -2.1116E-01 | 9.3223E-01 | -2.2849E-01 |
| 3.0000E-01 | 8.7428E-01 | -3.0586E-01 | 9.2624E-01 | -3.3654E-01 |
| 4.0000E-01 | 8.3184E-01 | -3.9488E-01 | 9.2080E-01 | -4.4321E-01 |
| 5.0000E-01 | 7.8124E-01 | -4.7786E-01 | 9.1579E-01 | -5.4895E-01 |
| 6.0000E-01 | 7.2312E-01 | -5.5431E-01 | 9.1113E-01 | -6.5401E-01 |
| 7.0000E-01 | 6.5816E-01 | -6.2372E-01 | 9.0675E-01 | -7.5854E-01 |
| 8.0000E-01 | 5.8709E-01 | -6.8560E-01 | 9.0262E-01 | -8.6265E-01 |
| 9.0000E-01 | 5.1070E-01 | -7.3950E-01 | 8.9870E-01 | -9.6641E-01 |
| 1.0000E 00 | 4.2980E-01 | -7.8502E-01 | 8.9497E-01 | -1.0699E 00 |
| 1.4000E 00 | 7.8606E-02 | -8.7805E-01 | 8.8156E-01 | -1.4815E 00 |
| 2.0000E 00 | -4.3253E-01 | -7.4877E-01 | 8.6472E-01 | 1.0470E 00 |
| 2.4000E 00 | -6.8578E-01 | -5.1067E-01 | 8.5503E-01 | 6.4008E-01 |
| 3.0000E 00 | -8.4174E-01 | -2.6594E-02 | 8.4216E-01 | 3.1583E-02 |
| 3.4000E 00 | -7.7703E-01 | 3.0421E-01 | 8.3445E-01 | -3.7316E-01 |
| 4.0000E 00 | -4.5948E-01 | 6.8394E-01 | 8.2395E-01 | -9.7923E-01 |
| 4.4000E 00 | -1.5285E-01 | 8.0312E-01 | 8.1753E-01 | -1.3827E 00 |
| 5.0000E 00 | 3.2715E-01 | 7.3950E-01 | 8.0864E-01 | 1.1543E 00 |
| 6.0000E 00 | 7.8671E-01 | 1.1733E-01 | 7.9541E-01 | 1.4805E-01 |
| 7.0000E 00 | 5.1322E-01 | -5.9238E-01 | 7.8378E-01 | -8.5688E-01 |
| 8.0000E 00 | -2.2118E-01 | -7.4110E-01 | 7.7340E-01 | 1.2808E 00 |
| 9.0000E 00 | -7.3481E-01 | -2.0937E-01 | 7.6406E-01 | 2.7758E-01 |
| 1.0000E 01 | -5.6553E-01 | 5.0105E-01 | 7.5556E-01 | -7.2502E-01 |
| 1.3000E 01 | 6.1048E-01 | -4.0756E-01 | 7.3403E-01 | -5.8865E-01 |
| 1.5000E 01 | -6.1531E-01 | -3.7803E-01 | 7.2216E-01 | 5.5092E-01 |
| 1.8000E 01 | 5.4491E-01 | 4.5054E-01 | 7.0704E-01 | 6.9088E-01 |
| 2.0000E 01 | 1.8038E-01 | -6.7467E-01 | 6.9837E-01 | -1.3095E 00 |
| 2.3000E 01 | -2.6934E-01 | 6.3198E-01 | 6.8698E-01 | -1.1679E 00 |
| 2.5000E 01 | 6.8006E-01 | -1.7679E-02 | 6.8029E-01 | -2.5991E-02 |
| 2.8000E 01 | -6.6678E-01 | -7.8008E-02 | 6.7133E-01 | 1.1646E-01 |
| 3.0000E 01 | 2.0443E-01 | 6.3382E-01 | 6.6597E-01 | 1.2588E 00 |
| 3.3000E 01 | -1.1086E-01 | -6.4931E-01 | 6.5870E-01 | 1.4017E 00 |
| 3.5000E 01 | -5.4099E-01 | 3.6802E-01 | 6.5430E-01 | -5.9737E-01 |
| 4.0000E 01 | -4.9777E-01 | -4.0948E-01 | 6.4456E-01 | 6.8839E-01 |
| 4.5000E 01 | 2.4983E-01 | -5.8519E-01 | 6.3629E-01 | -1.1673E 00 |
| 5.0000E 01 | 6.2474E-01 | 7.4463E-02 | 6.2917E-01 | 1.1863E-01 |

CASE II

$\phi = 180^{\circ}$ $\psi = 190^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | -1.1147E-01 | -1.1897E 00 | 1.1949E 00 | 1.4774E 00 |
| 2.0000E-02 | -1.1955E-01 | -1.1457E 00 | 1.1519E 00 | 1.4668E 00 |
| 4.0000E-02 | -1.3834E-01 | -1.1016E 00 | 1.1103E 00 | 1.4459E 00 |
| 6.0000E-02 | -1.5783E-01 | -1.0750E 00 | 1.0865E 00 | 1.4250E 00 |
| 1.0000E-01 | -1.9688E-01 | -1.0386E 00 | 1.0571E 00 | 1.3835E 00 |
| 2.0000E-01 | -2.9179E-01 | -9.7519E-01 | 1.0179E 00 | 1.2801E 00 |
| 3.0000E-01 | -3.8175E-01 | -9.1897E-01 | 9.9511E-01 | 1.1771E 00 |
| 4.0000E-01 | -4.6623E-01 | -8.6072E-01 | 9.7888E-01 | 1.0744E 00 |
| 5.0000E-01 | -5.4469E-01 | -7.9801E-01 | 9.6618E-01 | 9.7187E-01 |
| 6.0000E-01 | -6.1659E-01 | -7.3019E-01 | 9.5570E-01 | 8.6955E-01 |
| 7.0000E-01 | -6.8140E-01 | -6.5726E-01 | 9.4673E-01 | 7.6737E-01 |
| 8.0000E-01 | -7.3863E-01 | -5.7957E-01 | 9.3887E-01 | 6.6532E-01 |
| 9.0000E-01 | -7.8784E-01 | -4.9766E-01 | 9.3185E-01 | 5.6338E-01 |
| 1.0000E 00 | -8.2866E-01 | -4.1216E-01 | 9.2550E-01 | 4.6155E-01 |
| 1.4000E 00 | -9.0326E-01 | -4.9769E-02 | 9.0463E-01 | 5.5044E-02 |
| 2.0000E 00 | -7.5005E-01 | 4.6279E-01 | 8.8133E-01 | -5.5284E-01 |
| 2.4000E 00 | -5.0031E-01 | 7.1037E-01 | 8.6887E-01 | -9.5719E-01 |
| 3.0000E 00 | -6.8870E-03 | 8.5304E-01 | 8.5306E-01 | -1.5627E 00 |
| 3.4000E 00 | 3.2481E-01 | 7.7890E-01 | 8.4392E-01 | 1.1757E 00 |
| 4.0000E 00 | 6.9951E-01 | 4.4996E-01 | 8.3173E-01 | 5.7161E-01 |
| 4.4000E 00 | 8.1265E-01 | 1.3885E-01 | 8.2443E-01 | 1.6923E-01 |
| 5.0000E 00 | 7.3898E-01 | -3.4241E-01 | 8.1445E-01 | -4.3391E-01 |
| 6.0000E 00 | 1.0575E-01 | -7.9287E-01 | 7.9989E-01 | -1.4382E 00 |
| 7.0000E 00 | -6.0215E-01 | -5.0719E-01 | 7.8729E-01 | 7.0000E-01 |
| 8.0000E 00 | -7.4091E-01 | 2.3137E-01 | 7.7620E-01 | -3.0269E-01 |
| 9.0000E 00 | -2.0142E-01 | 7.3936E-01 | 7.6630E-01 | -1.3048E 00 |
| 1.0000E 01 | 5.0829E-01 | 5.6147E-01 | 7.5737E-01 | 8.3507E-01 |
| 1.3000E 01 | -4.1337E-01 | -6.0771E-01 | 7.3498E-01 | 9.7348E-01 |
| 1.5000E 01 | -3.7361E-01 | 6.1870E-01 | 7.2275E-01 | -1.0275E 00 |
| 1.8000E 01 | 4.4715E-01 | -5.4801E-01 | 7.0729E-01 | -8.8640E-01 |
| 2.0000E 01 | -6.7580E-01 | -1.7644E-01 | 6.9846E-01 | 2.5538E-01 |
| 2.3000E 01 | 6.3329E-01 | 2.6608E-01 | 6.8691E-01 | 3.9776E-01 |
| 2.5000E 01 | -2.0866E-02 | -6.7982E-01 | 6.8014E-01 | 1.5401E 00 |
| 2.8000E 01 | -7.5207E-02 | 6.6688E-01 | 6.7111E-01 | -1.4585E 00 |
| 3.0000E 01 | 6.3278E-01 | -2.0679E-01 | 6.6571E-01 | -3.1586E-01 |
| 3.3000E 01 | -6.4862E-01 | 1.1307E-01 | 6.5840E-01 | -1.7258E-01 |
| 3.5000E 01 | 3.6960E-01 | 5.3953E-01 | 6.5398E-01 | 9.7018E-01 |
| 4.0000E 01 | -4.0788E-01 | 4.9864E-01 | 6.4422E-01 | -8.8518E-01 |
| 4.5000E 01 | -5.8547E-01 | -2.4828E-01 | 6.3594E-01 | 4.0108E-01 |
| 5.0000E 01 | 7.3105E-02 | -6.2456E-01 | 6.2882E-01 | -1.4543E 00 |

CASE II

$\phi = 180^{\circ}$ $\psi = 190^{\circ}$

| X | RE(EP) | IM(EP) | EP(AMP) | PHASE(EP) |
|---|---|---|---|---|
| 10.0000E-03 | 1.9228E-02 | 1.9829E-01 | 1.9922E-01 | 1.4741E 00 |
| 2.0000E-02 | 2.0999E-02 | 1.9073E-01 | 1.9188E-01 | 1.4611E 00 |
| 4.0000E-02 | 2.4801E-02 | 1.8297E-01 | 1.8464E-01 | 1.4361E 00 |
| 6.0000E-02 | 2.8587E-02 | 1.7812E-01 | 1.8040E-01 | 1.4117E 00 |
| 1.0000E-01 | 3.5933E-02 | 1.7125E-01 | 1.7498E-01 | 1.3640E 00 |
| 2.0000E-01 | 5.3030E-02 | 1.5867E-01 | 1.6730E-01 | 1.2483E 00 |
| 3.0000E-01 | 6.8552E-02 | 1.4734E-01 | 1.6250E-01 | 1.1353E 00 |
| 4.0000E-01 | 8.2615E-02 | 1.3574E-01 | 1.5890E-01 | 1.0240E 00 |
| 5.0000E-01 | 9.5236E-02 | 1.2351E-01 | 1.5596E-01 | 9.1394E-01 |
| 6.0000E-01 | 1.0639E-01 | 1.1059E-01 | 1.5346E-01 | 8.0473E-01 |
| 7.0000E-01 | 1.1605E-01 | 9.7004E-02 | 1.5125E-01 | 6.9623E-01 |
| 8.0000E-01 | 1.2418E-01 | 8.2843E-02 | 1.4928E-01 | 5.8831E-01 |
| 9.0000E-01 | 1.3075E-01 | 6.8217E-02 | 1.4748E-01 | 4.8087E-01 |
| 1.0000E 00 | 1.3575E-01 | 5.3256E-02 | 1.4582E-01 | 3.7385E-01 |
| 1.4000E 00 | 1.4004E-01 | -7.1428E-03 | 1.4022E-01 | -5.0962E-02 |
| 2.0000E 00 | 1.0384E-01 | -8.4219E-02 | 1.3370E-01 | -6.8145E-01 |
| 2.4000E 00 | 5.9166E-02 | -1.1589E-01 | 1.3012E-01 | -1.0987E 00 |
| 3.0000E 00 | -1.8838E-02 | -1.2408E-01 | 1.2550E-01 | 1.4201E 00 |
| 3.4000E 00 | -6.5660E-02 | -1.0376E-01 | 1.2279E-01 | 1.0066E 00 |
| 4.0000E 00 | -1.1029E-01 | -4.5117E-02 | 1.1916E-01 | 3.8832E-01 |
| 4.4000E 00 | -1.1693E-01 | 2.6676E-03 | 1.1696E-01 | -2.2810E-02 |
| 5.0000E 00 | -9.1521E-02 | 6.7881E-02 | 1.1395E-01 | -6.3817E-01 |
| 6.0000E 00 | 9.8527E-03 | 1.0907E-01 | 1.0951E-01 | 1.4807E 00 |
| 7.0000E 00 | 9.4626E-02 | 4.6980E-02 | 1.0565E-01 | 4.6083E-01 |
| 8.0000E 00 | 8.6780E-02 | -5.4023E-02 | 1.0222E-01 | -5.5682E-01 |
| 9.0000E 00 | -1.8478E-04 | -9.9148E-02 | 9.9148E-02 | 1.5689E 00 |
| 1.0000E 01 | -8.1920E-02 | -5.0743E-02 | 9.6362E-02 | 5.5458E-01 |
| 1.3000E 01 | 7.0557E-02 | 5.4753E-02 | 8.9310E-02 | 6.5994E-01 |
| 1.5000E 01 | 1.7879E-02 | -8.3527E-02 | 8.5419E-02 | -1.3599E 00 |
| 1.8000E 01 | -2.5861E-02 | 7.6180E-02 | 8.0450E-02 | -1.2435E 00 |
| 2.0000E 01 | 7.7061E-02 | -9.0052E-03 | 7.7585E-02 | -1.1633E-01 |
| 2.3000E 01 | -7.3805E-02 | -4.7509E-04 | 7.3807E-02 | 6.4371E-03 |
| 2.5000E 01 | 3.0083E-02 | 6.4942E-02 | 7.1571E-02 | 1.1370E 00 |
| 2.8000E 01 | -2.0713E-02 | -6.5359E-02 | 6.8563E-02 | 1.2639E 00 |
| 3.0000E 01 | -4.9075E-02 | 4.5248E-02 | 6.6751E-02 | -7.4486E-01 |
| 3.3000E 01 | 5.2498E-02 | -3.7091E-02 | 6.4279E-02 | -6.1510E-01 |
| 3.5000E 01 | -5.4494E-02 | -3.1155E-02 | 6.2772E-02 | 5.1936E-01 |
| 4.0000E 01 | 1.2737E-02 | -5.8029E-02 | 5.9411E-02 | -1.3547E 00 |
| 4.5000E 01 | 5.6322E-02 | -4.7835E-03 | 5.6525E-02 | -8.4729E-02 |
| 5.0000E 01 | 2.0213E-02 | 5.0085E-02 | 5.4010E-02 | 1.1872E 00 |

CASE II

$\phi = 180^{\circ}$ $\psi = 200^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 8.9755E-01 | -1.4912E-02 | 8.9768E-01 | -1.6612E-02 |
| 2.0000E-02 | 8.9529E-01 | -2.7793E-02 | 8.9572E-01 | -3.1034E-02 |
| 4.0000E-02 | 8.9069E-01 | -5.1743E-02 | 8.9219E-01 | -5.8028E-02 |
| 6.0000E-02 | 8.8584E-01 | -7.4353E-02 | 8.8896E-01 | -8.3738E-02 |
| 1.0000E-01 | 8.7527E-01 | -1.1716E-01 | 8.8308E-01 | -1.3306E-01 |
| 2.0000E-01 | 8.4334E-01 | -2.1548E-01 | 8.7044E-01 | -2.5015E-01 |
| 3.0000E-01 | 8.0374E-01 | -3.0497E-01 | 8.5965E-01 | -3.6265E-01 |
| 4.0000E-01 | 7.5695E-01 | -3.8694E-01 | 8.5011E-01 | -4.7256E-01 |
| 5.0000E-01 | 7.0355E-01 | -4.6169E-01 | 8.4151E-01 | -5.8074E-01 |
| 6.0000E-01 | 6.4418E-01 | -5.2916E-01 | 8.3365E-01 | -6.8768E-01 |
| 7.0000E-01 | 5.7949E-01 | -5.8916E-01 | 8.2639E-01 | -7.9367E-01 |
| 8.0000E-01 | 5.1020E-01 | -6.4150E-01 | 8.1965E-01 | -8.9891E-01 |
| 9.0000E-01 | 4.3703E-01 | -6.8596E-01 | 8.1335E-01 | -1.0035E 00 |
| 1.0000E 00 | 3.6073E-01 | -7.2241E-01 | 8.0747E-01 | -1.1077E 00 |
| 1.4000E 00 | 3.9569E-02 | -7.8591E-01 | 7.8691E-01 | -1.5205E 00 |
| 2.0000E 00 | -4.0632E-01 | -6.4526E-01 | 7.6253E-01 | 1.0088E 00 |
| 2.4000E 00 | -6.1691E-01 | -4.2514E-01 | 7.4921E-01 | 6.0340E-01 |
| 3.0000E 00 | -7.3234E-01 | 1.6116E-03 | 7.3234E-01 | -2.2006E-03 |
| 3.4000E 00 | -6.6428E-01 | 2.8458E-01 | 7.2267E-01 | -4.0475E-01 |
| 4.0000E 00 | -3.7921E-01 | 6.0025E-01 | 7.0999E-01 | -1.0074E 00 |
| 4.4000E 00 | -1.1353E-01 | 6.9330E-01 | 7.0254E-01 | -1.4085E 00 |
| 5.0000E 00 | 2.9418E-01 | 6.2696E-01 | 6.9255E-01 | 1.1321E 00 |
| 6.0000E 00 | 6.7258E-01 | 8.9031E-02 | 6.7844E-01 | 1.3161E-01 |
| 7.0000E 00 | 4.3102E-01 | -5.0869E-01 | 6.6674E-01 | -8.6786E-01 |
| 8.0000E 00 | -1.9155E-01 | -6.2830E-01 | 6.5685E-01 | 1.2749E 00 |
| 9.0000E 00 | -6.2374E-01 | -1.7693E-01 | 6.4835E-01 | 2.7640E-01 |
| 1.0000E 01 | -4.8109E-01 | 4.2353E-01 | 6.4096E-01 | -7.2185E-01 |
| 1.3000E 01 | 5.2347E-01 | -3.3882E-01 | 6.2355E-01 | -5.7445E-01 |
| 1.5000E 01 | -5.1717E-01 | -3.3228E-01 | 6.1472E-01 | 5.7109E-01 |
| 1.8000E 01 | 4.5489E-01 | 3.9763E-01 | 6.0418E-01 | 7.1833E-01 |
| 2.0000E 01 | 1.7264E-01 | -5.7302E-01 | 5.9847E-01 | -1.2782E 00 |
| 2.3000E 01 | -2.5140E-01 | 5.3522E-01 | 5.9132E-01 | -1.1317E 00 |
| 2.5000E 01 | 5.8723E-01 | 7.6022E-03 | 5.8728E-01 | 1.2945E-02 |
| 2.8000E 01 | -5.7475E-01 | -9.1989E-02 | 5.8206E-01 | 1.5870E-01 |
| 3.0000E 01 | 1.5329E-01 | 5.5843E-01 | 5.7908E-01 | 1.3029E 00 |
| 3.3000E 01 | -7.0405E-02 | -5.7071E-01 | 5.7503E-01 | 1.4481E 00 |
| 3.5000E 01 | -4.8829E-01 | 2.9919E-01 | 5.7266E-01 | -5.4973E-01 |
| 4.0000E 01 | -4.1971E-01 | -3.8206E-01 | 5.6756E-01 | 7.3847E-01 |
| 4.5000E 01 | 2.4770E-01 | -5.0600E-01 | 5.6337E-01 | -1.1156E 00 |
| 5.0000E 01 | 5.5162E-01 | 9.5547E-02 | 5.5984E-01 | 1.7151E-01 |

CASE II

$\phi = 180^{\circ}$ $\psi = 200^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | -2.2804E-01 | -1.3403E 00 | 1.3595E 00 | 1.4023E 00 |
| 2.0000E-02 | -2.2617E-01 | -1.2474E 00 | 1.2678E 00 | 1.3914E 00 |
| 4.0000E-02 | -2.3547E-01 | -1.1581E 00 | 1.1818E 00 | 1.3702E 00 |
| 6.0000E-02 | -2.4918E-01 | -1.1063E 00 | 1.1340E 00 | 1.3492E 00 |
| 1.0000E-01 | -2.7987E-01 | -1.0391E 00 | 1.0761E 00 | 1.3077E 00 |
| 2.0000E-01 | -3.5834E-01 | -9.3517E-01 | 1.0015E 00 | 1.2049E 00 |
| 3.0000E-01 | -4.3291E-01 | -8.5638E-01 | 9.5958E-01 | 1.1027E 00 |
| 4.0000E-01 | -5.0196E-01 | -7.8354E-01 | 9.3054E-01 | 1.0010E 00 |
| 5.0000E-01 | -5.6493E-01 | -7.1130E-01 | 9.0835E-01 | 8.9959E-01 |
| 6.0000E-01 | -6.2141E-01 | -6.3771E-01 | 8.9041E-01 | 7.9834E-01 |
| 7.0000E-01 | -6.7105E-01 | -5.6209E-01 | 8.7536E-01 | 6.9726E-01 |
| 8.0000E-01 | -7.1357E-01 | -4.8431E-01 | 8.6241E-01 | 5.9630E-01 |
| 9.0000E-01 | -7.4872E-01 | -4.0460E-01 | 8.5105E-01 | 4.9543E-01 |
| 1.0000E 00 | -7.7620E-01 | -3.2356E-01 | 8.4094E-01 | 3.9495E-01 |
| 1.4000E 00 | -8.0887E-01 | 5.6345E-03 | 8.0889E-01 | -6.9658E-03 |
| 2.0000E 00 | -6.3637E-01 | 4.4303E-01 | 7.7540E-01 | -6.0816E-01 |
| 2.4000E 00 | -4.0455E-01 | 6.4163E-01 | 7.5852E-01 | -1.0082E 00 |
| 3.0000E 00 | 2.7214E-02 | 7.3769E-01 | 7.3819E-01 | 1.5339E 00 |
| 3.4000E 00 | 3.0713E-01 | 6.5891E-01 | 7.2697E-01 | 1.1346E 00 |
| 4.0000E 00 | 6.1271E-01 | 3.6395E-01 | 7.1265E-01 | 5.3599E-01 |
| 4.4000E 00 | 6.9779E-01 | 9.6242E-02 | 7.0440E-01 | 1.3706E-01 |
| 5.0000E 00 | 6.2108E-01 | -3.0863E-01 | 6.9353E-01 | -4.6119E-01 |
| 6.0000E 00 | 7.6348E-02 | -6.7418E-01 | 6.7848E-01 | -1.4580E 00 |
| 7.0000E 00 | -5.1516E-01 | -4.2246E-01 | 6.6624E-01 | 6.8685E-01 |
| 8.0000E 00 | -6.2477E-01 | 2.0003E-01 | 6.5601E-01 | -3.0985E-01 |
| 9.0000E 00 | -1.6904E-01 | 6.2486E-01 | 6.4732E-01 | -1.3066E 00 |
| 1.0000E 01 | 4.2794E-01 | 4.7565E-01 | 6.3982E-01 | 8.3814E-01 |
| 1.3000E 01 | -3.4224E-01 | -5.1979E-01 | 6.2234E-01 | 9.8853E-01 |
| 1.5000E 01 | -3.2827E-01 | 5.1833E-01 | 6.1354E-01 | -1.0062E 00 |
| 1.8000E 01 | 3.9458E-01 | -4.5610E-01 | 6.0309E-01 | -8.5759E-01 |
| 2.0000E 01 | -5.7281E-01 | -1.6982E-01 | 5.9746E-01 | 2.8821E-01 |
| 2.3000E 01 | 5.3530E-01 | 2.4907E-01 | 5.9040E-01 | 4.3549E-01 |
| 2.5000E 01 | 5.6951E-03 | -5.8640E-01 | 5.8643E-01 | -1.5611E 00 |
| 2.8000E 01 | -9.0296E-02 | 5.7424E-01 | 5.8130E-01 | -1.4148E 00 |
| 3.0000E 01 | 5.5731E-01 | -1.5443E-01 | 5.7831E-01 | -2.7032E-01 |
| 3.3000E 01 | -5.6990E-01 | 7.1556E-02 | 5.7438E-01 | -1.2490E-01 |
| 3.5000E 01 | 2.9984E-01 | 4.8717E-01 | 5.7205E-01 | 1.0191E 00 |
| 4.0000E 01 | -3.8102E-01 | 4.1994E-01 | 5.6703E-01 | -8.3395E-01 |
| 4.5000E 01 | -5.0591E-01 | -2.4682E-01 | 5.6291E-01 | 4.5390E-01 |
| 5.0000E 01 | 9.4835E-02 | -5.5133E-01 | 5.5943E-01 | -1.4005E 00 |

CASE II

$\phi = 180^{\circ}$ $\psi = 200^{\circ}$

| X | RE(EP) | IM(EP) | EP(AMP) | PHASE(EP) |
|---|---|---|---|---|
| 10.0000E-03 | 7.6924E-02 | 4.3405E-01 | 4.4081E-01 | 1.3954E 00 |
| 2.0000E-02 | 7.8005E-02 | 4.0280E-01 | 4.1029E-01 | 1.3795E 00 |
| 4.0000E-02 | 8.3530E-02 | 3.7182E-01 | 3.8109E-01 | 1.3498E 00 |
| 6.0000E-02 | 8.9881E-02 | 3.5316E-01 | 3.6442E-01 | 1.3216E 00 |
| 1.0000E-01 | 1.0260E-01 | 3.2790E-01 | 3.4357E-01 | 1.2675E 00 |
| 2.0000E-01 | 1.3159E-01 | 2.8619E-01 | 3.1499E-01 | 1.1398E 00 |
| 3.0000E-01 | 1.5639E-01 | 2.5336E-01 | 2.9774E-01 | 1.0178E 00 |
| 4.0000E-01 | 1.7742E-01 | 2.2318E-01 | 2.8511E-01 | 8.9913E-01 |
| 5.0000E-01 | 1.9498E-01 | 1.9398E-01 | 2.7504E-01 | 7.8282E-01 |
| 6.0000E-01 | 2.0925E-01 | 1.6521E-01 | 2.6661E-01 | 6.6835E-01 |
| 7.0000E-01 | 2.2034E-01 | 1.3673E-01 | 2.5931E-01 | 5.5538E-01 |
| 8.0000E-01 | 2.2836E-01 | 1.0855E-01 | 2.5284E-01 | 4.4374E-01 |
| 9.0000E-01 | 2.3340E-01 | 8.0813E-02 | 2.4700E-01 | 3.3332E-01 |
| 1.0000E 00 | 2.3601E-01 | 5.2937E-02 | 2.4187E-01 | 2.2065E-01 |
| 1.4000E 00 | 2.1949E-01 | -4.8020E-02 | 2.2468E-01 | -2.1539E-01 |
| 2.0000E 00 | 1.3466E-01 | -1.5555E-01 | 2.0574E-01 | -8.5724E-01 |
| 2.4000E 00 | 5.6179E-02 | -1.8759E-01 | 1.9582E-01 | -1.2798E 00 |
| 3.0000E 00 | -6.0756E-02 | -1.7320E-01 | 1.8354E-01 | 1.2334E 00 |
| 3.4000E 00 | -1.2085E-01 | -1.2880E-01 | 1.7662E-01 | 8.1727E-01 |
| 4.0000E 00 | -1.6440E-01 | -3.2675E-02 | 1.6762E-01 | 1.9619E-01 |
| 4.4000E 00 | -1.5857E-01 | 3.4821E-02 | 1.6235E-01 | -2.1616E-01 |
| 5.0000E 00 | -1.0451E-01 | 1.1489E-01 | 1.5532E-01 | -8.3267E-01 |
| 6.0000E 00 | 4.0877E-02 | 1.3953E-01 | 1.4540E-01 | 1.2858E 00 |
| 7.0000E 00 | 1.3230E-01 | 3.6152E-02 | 1.3715E-01 | 2.6674E-01 |
| 8.0000E 00 | 9.5291E-02 | -8.8645E-02 | 1.3015E-01 | -7.4928E-01 |
| 9.0000E 00 | -2.3700E-02 | -1.2181E-01 | 1.2410E-01 | 1.3786E 00 |
| 1.0000E 01 | -1.1090E-01 | -4.2609E-02 | 1.1880E-01 | 3.6683E-01 |
| 1.3000E 01 | 9.4127E-02 | 4.9062E-02 | 1.0615E-01 | 4.8049E-01 |
| 1.5000E 01 | 3.8006E-03 | -9.9547E-02 | 9.9619E-02 | -1.5326E 00 |
| 1.8000E 01 | -1.4955E-02 | 9.0471E-02 | 9.1699E-02 | -1.4070E 00 |
| 2.0000E 01 | 8.4059E-02 | -2.3629E-02 | 8.7317E-02 | -2.7403E-01 |
| 2.3000E 01 | -8.0973E-02 | 1.1629E-02 | 8.1804E-02 | -1.4264E-01 |
| 2.5000E 01 | 4.2936E-02 | 6.5883E-02 | 7.8638E-02 | 9.9323E-01 |
| 2.8000E 01 | -3.1960E-02 | -6.7270E-02 | 7.4477E-02 | 1.1273E 00 |
| 3.0000E 01 | -4.6171E-02 | 5.5617E-02 | 7.2284E-02 | -8.7793E-01 |
| 3.3000E 01 | 5.0817E-02 | -4.6429E-02 | 6.8833E-02 | -7.4031E-01 |
| 3.5000E 01 | -6.1653E-02 | -2.5935E-02 | 6.6886E-02 | 3.9818E-01 |
| 4.0000E 01 | 6.5099E-03 | -6.2347E-02 | 6.2686E-02 | -1.4668E 00 |
| 4.5000E 01 | 5.8138E-02 | -1.1165E-02 | 5.9201E-02 | -1.8974E-01 |
| 5.0000E 01 | 2.5969E-02 | 4.9823E-02 | 5.6185E-02 | 1.0903E 00 |

CASE II

$\phi = 180^{\circ}$ $\psi = 210^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 8.5319E-01 | -1.6899E-02 | 8.5335E-01 | -1.9804E-02 |
| 2.0000E-02 | 8.4983E-01 | -3.0561E-02 | 8.5038E-01 | -3.5945E-02 |
| 4.0000E-02 | 8.4337E-01 | -5.5185E-02 | 8.4517E-01 | -6.5340E-02 |
| 6.0000E-02 | 8.3693E-01 | -7.7879E-02 | 8.4054E-01 | -9.2786E-02 |
| 1.0000E-01 | 8.2363E-01 | -1.1992E-01 | 8.3231E-01 | -1.4458E-01 |
| 2.0000E-01 | 7.8679E-01 | -2.1362E-01 | 8.1528E-01 | -2.6512E-01 |
| 3.0000E-01 | 7.4433E-01 | -2.9666E-01 | 8.0127E-01 | -3.7927E-01 |
| 4.0000E-01 | 6.9638E-01 | -3.7137E-01 | 7.8922E-01 | -4.8992E-01 |
| 5.0000E-01 | 6.4335E-01 | -4.3854E-01 | 7.7860E-01 | -5.9831E-01 |
| 6.0000E-01 | 5.8571E-01 | -4.9846E-01 | 7.6910E-01 | -7.0510E-01 |
| 7.0000E-01 | 5.2398E-01 | -5.5119E-01 | 7.6050E-01 | -8.1070E-01 |
| 8.0000E-01 | 4.5873E-01 | -5.9670E-01 | 7.5265E-01 | -9.1539E-01 |
| 9.0000E-01 | 3.9055E-01 | -6.3493E-01 | 7.4543E-01 | -1.0193E 00 |
| 1.0000E 00 | 3.2006E-01 | -6.6582E-01 | 7.3875E-01 | -1.1227E 00 |
| 1.4000E 00 | 2.7796E-02 | -7.1573E-01 | 7.1627E-01 | -1.5320E 00 |
| 2.0000E 00 | -3.7171E-01 | -5.8268E-01 | 6.9114E-01 | 1.0030E 00 |
| 2.4000E 00 | -5.5925E-01 | -3.8350E-01 | 6.7811E-01 | 6.0109E-01 |
| 3.0000E 00 | -6.6228E-01 | -2.4278E-04 | 6.6228E-01 | 3.6657E-04 |
| 3.4000E 00 | -6.0216E-01 | 2.5407E-01 | 6.5356E-01 | -3.9927E-01 |
| 4.0000E 00 | -3.4824E-01 | 5.3994E-01 | 6.4250E-01 | -9.9798E-01 |
| 4.4000E 00 | -1.1013E-01 | 6.2658E-01 | 6.3619E-01 | -1.3968E 00 |
| 5.0000E 00 | 2.5834E-01 | 5.7236E-01 | 6.2796E-01 | 1.1468E 00 |
| 6.0000E 00 | 6.0978E-01 | 9.2494E-02 | 6.1675E-01 | 1.5054E-01 |
| 7.0000E 00 | 4.0314E-01 | -4.5489E-01 | 6.0782E-01 | -8.4564E-01 |
| 8.0000E 00 | -1.6081E-01 | -5.7857E-01 | 6.0050E-01 | 1.2997E 00 |
| 9.0000E 00 | -5.6727E-01 | -1.7750E-01 | 5.9439E-01 | 3.0326E-01 |
| 1.0000E 01 | -4.5315E-01 | 3.7658E-01 | 5.8920E-01 | -6.9338E-01 |
| 1.3000E 01 | 4.9435E-01 | -2.9828E-01 | 5.7737E-01 | -5.4290E-01 |
| 1.5000E 01 | -4.7052E-01 | -3.2448E-01 | 5.7156E-01 | 6.0372E-01 |
| 1.8000E 01 | 4.1256E-01 | 3.8570E-01 | 5.6478E-01 | 7.5177E-01 |
| 2.0000E 01 | 1.7986E-01 | -5.3156E-01 | 5.6116E-01 | -1.2445E 00 |
| 2.3000E 01 | -2.5347E-01 | 4.9563E-01 | 5.5668E-01 | -1.0981E 00 |
| 2.5000E 01 | 5.5358E-01 | 2.5699E-02 | 5.5418E-01 | 4.6391E-02 |
| 2.8000E 01 | -5.4085E-01 | -1.0503E-01 | 5.5095E-01 | 1.9180E-01 |
| 3.0000E 01 | 1.2792E-01 | 5.3398E-01 | 5.4909E-01 | 1.3357E 00 |
| 3.3000E 01 | -4.9368E-02 | -5.4440E-01 | 5.4663E-01 | 1.4804E 00 |
| 3.5000E 01 | -4.7372E-01 | 2.6983E-01 | 5.4518E-01 | -5.1777E-01 |
| 4.0000E 01 | -3.8932E-01 | -3.7718E-01 | 5.4206E-01 | 7.6956E-01 |
| 4.5000E 01 | 2.5174E-01 | -4.7717E-01 | 5.3950E-01 | -1.0853E 00 |
| 5.0000E 01 | 5.2654E-01 | 1.0722E-01 | 5.3735E-01 | 2.0089E-01 |

CASE II

$\phi = 180^{\circ}$ $\psi = 210^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | -3.4753E-01 | -1.4455E 00 | 1.4867E 00 | 1.3349E 00 |
| 2.0000E-02 | -3.2819E-01 | -1.3048E 00 | 1.3454E 00 | 1.3244E 00 |
| 4.0000E-02 | -3.2082E-01 | -1.1740E 00 | 1.2170E 00 | 1.3040E 00 |
| 6.0000E-02 | -3.2455E-01 | -1.1006E 00 | 1.1475E 00 | 1.2840E 00 |
| 1.0000E-01 | -3.4145E-01 | -1.0090E 00 | 1.0652E 00 | 1.2445E 00 |
| 2.0000E-01 | -3.9639E-01 | -8.7739E-01 | 9.6277E-01 | 1.1465E 00 |
| 3.0000E-01 | -4.5258E-01 | -7.8671E-01 | 9.0760E-01 | 1.0488E 00 |
| 4.0000E-01 | -5.0561E-01 | -7.0867E-01 | 8.7055E-01 | 9.5109E-01 |
| 5.0000E-01 | -5.5423E-01 | -6.3523E-01 | 8.4302E-01 | 8.5339E-01 |
| 6.0000E-01 | -5.9779E-01 | -5.6322E-01 | 8.2132E-01 | 7.5562E-01 |
| 7.0000E-01 | -6.3587E-01 | -4.9126E-01 | 8.0353E-01 | 6.5780E-01 |
| 8.0000E-01 | -6.6814E-01 | -4.1879E-01 | 7.8854E-01 | 5.5990E-01 |
| 9.0000E-01 | -6.9435E-01 | -3.4569E-01 | 7.7564E-01 | 4.6194E-01 |
| 1.0000E 00 | -7.1431E-01 | -2.7206E-01 | 7.6437E-01 | 3.6391E-01 |
| 1.4000E 00 | -7.2976E-01 | 2.0982E-02 | 7.3006E-01 | -2.8744E-02 |
| 2.0000E 00 | -5.6734E-01 | 4.0427E-01 | 6.9664E-01 | -6.1911E-01 |
| 2.4000E 00 | -3.6010E-01 | 5.7774E-01 | 6.8078E-01 | -1.0134E 00 |
| 3.0000E 00 | 2.3174E-02 | 6.6214E-01 | 6.6254E-01 | 1.5358E 00 |
| 3.4000E 00 | 2.7240E-01 | 5.9336E-01 | 6.5290E-01 | 1.1404E 00 |
| 4.0000E 00 | 5.4757E-01 | 3.3324E-01 | 6.4100E-01 | 5.4669E-01 |
| 4.4000E 00 | 6.2719E-01 | 9.5126E-02 | 6.3436E-01 | 1.5052E-01 |
| 5.0000E 00 | 5.6511E-01 | -2.6895E-01 | 6.2585E-01 | -4.4420E-01 |
| 6.0000E 00 | 8.2316E-02 | -6.0894E-01 | 6.1447E-01 | -1.4364E 00 |
| 7.0000E 00 | -4.5849E-01 | -3.9559E-01 | 6.0556E-01 | 7.1188E-01 |
| 8.0000E 00 | -5.7467E-01 | 1.6664E-01 | 5.9834E-01 | -2.8223E-01 |
| 9.0000E 00 | -1.7153E-01 | 5.6698E-01 | 5.9236E-01 | -1.2770E 00 |
| 1.0000E 01 | 3.7905E-01 | 4.4860E-01 | 5.8729E-01 | 8.6923E-01 |
| 1.3000E 01 | -3.0025E-01 | -4.9135E-01 | 5.7583E-01 | 1.0223E 00 |
| 1.5000E 01 | -3.2157E-01 | 4.7089E-01 | 5.7022E-01 | -9.7164E-01 |
| 1.8000E 01 | 3.8351E-01 | -4.1309E-01 | 5.6367E-01 | -8.2251E-01 |
| 2.0000E 01 | -5.3116E-01 | -1.7797E-01 | 5.6018E-01 | 3.2330E-01 |
| 2.3000E 01 | 4.9550E-01 | 2.5190E-01 | 5.5585E-01 | 4.7033E-01 |
| 2.5000E 01 | 2.4490E-02 | -5.5288E-01 | 5.5342E-01 | -1.5265E 00 |
| 2.8000E 01 | -1.0394E-01 | 5.4039E-01 | 5.5030E-01 | -1.3808E 00 |
| 3.0000E 01 | 5.3319E-01 | -1.2863E-01 | 5.4849E-01 | -2.3673E-01 |
| 3.3000E 01 | -5.4380E-01 | 5.0076E-02 | 5.4610E-01 | -9.1827E-02 |
| 3.5000E 01 | 2.7019E-01 | 4.7295E-01 | 5.4469E-01 | 1.0518E 00 |
| 4.0000E 01 | -3.7649E-01 | 3.8941E-01 | 5.4165E-01 | -8.0228E-01 |
| 4.5000E 01 | -4.7707E-01 | -2.5117E-01 | 5.3915E-01 | 4.8460E-01 |
| 5.0000E 01 | 1.0678E-01 | -5.2632E-01 | 5.3705E-01 | -1.3706E 00 |

CASE II

$\phi = 180^{\circ}$ $\psi = 210^{\circ}$

| X | RE(EP) | IM(EP) | EP(AMP) | PHASE(EP) |
|---|---|---|---|---|
| 10.0000E-03 | 1.7449E-01 | 6.9159E-01 | 7.1327E-01 | 1.3236E 00 |
| 2.0000E-02 | 1.6891E-01 | 6.2081E-01 | 6.4338E-01 | 1.3051E 00 |
| 4.0000E-02 | 1.7054E-01 | 5.5277E-01 | 5.7848E-01 | 1.2715E 00 |
| 6.0000E-02 | 1.7601E-01 | 5.1295E-01 | 5.4231E-01 | 1.2402E 00 |
| 1.0000E-01 | 1.8907E-01 | 4.6079E-01 | 4.9807E-01 | 1.1814E 00 |
| 2.0000E-01 | 2.2031E-01 | 3.8011E-01 | 4.3934E-01 | 1.0455E 00 |
| 3.0000E-01 | 2.4609E-01 | 3.2181E-01 | 4.0512E-01 | 9.1795E-01 |
| 4.0000E-01 | 2.6657E-01 | 2.7183E-01 | 3.8072E-01 | 7.9517E-01 |
| 5.0000E-01 | 2.8223E-01 | 2.2620E-01 | 3.6169E-01 | 6.7564E-01 |
| 6.0000E-01 | 2.9347E-01 | 1.8338E-01 | 3.4605E-01 | 5.5851E-01 |
| 7.0000E-01 | 3.0062E-01 | 1.4272E-01 | 3.3278E-01 | 4.4324E-01 |
| 8.0000E-01 | 3.0397E-01 | 1.0394E-01 | 3.2125E-01 | 3.2947E-01 |
| 9.0000E-01 | 3.0377E-01 | 6.6950E-02 | 3.1106E-01 | 2.1693E-01 |
| 1.0000E 00 | 3.0026E-01 | 3.1775E-02 | 3.0194E-01 | 1.0543E-01 |
| 1.4000E 00 | 2.5788E-01 | -8.9114E-02 | 2.7284E-01 | -3.3272E-01 |
| 2.0000E 00 | 1.3610E-01 | -2.0054E-01 | 2.4236E-01 | -9.7453E-01 |
| 2.4000E 00 | 3.9509E-02 | -2.2362E-01 | 2.2708E-01 | -1.3959E 00 |
| 3.0000E 00 | -9.0987E-02 | -1.8795E-01 | 2.0881E-01 | 1.1199E 00 |
| 3.4000E 00 | -1.5131E-01 | -1.2897E-01 | 1.9882E-01 | 7.0589E-01 |
| 4.0000E 00 | -1.8545E-01 | -1.6401E-02 | 1.8617E-01 | 8.8213E-02 |
| 4.4000E 00 | -1.6976E-01 | 5.6595E-02 | 1.7895E-01 | -3.2179E-01 |
| 5.0000E 00 | -1.0069E-01 | 1.3635E-01 | 1.6950E-01 | -9.3473E-01 |
| 6.0000E 00 | 5.8262E-02 | 1.4531E-01 | 1.5656E-01 | 1.1895E 00 |
| 7.0000E 00 | 1.4388E-01 | 2.5565E-02 | 1.4613E-01 | 1.7585E-01 |
| 8.0000E 00 | 9.2277E-02 | -1.0194E-01 | 1.3750E-01 | -8.3510E-01 |
| 9.0000E 00 | -3.5144E-02 | -1.2538E-01 | 1.3021E-01 | 1.2975E 00 |
| 1.0000E 01 | -1.1877E-01 | -3.5441E-02 | 1.2394E-01 | 2.9000E-01 |
| 1.3000E 01 | 1.0012E-01 | 4.4118E-02 | 1.0941E-01 | 4.1507E-01 |
| 1.5000E 01 | -2.2339E-03 | -1.0209E-01 | 1.0211E-01 | 1.5489E 00 |
| 1.8000E 01 | -1.0355E-02 | 9.2868E-02 | 9.3444E-02 | -1.4598E 00 |
| 2.0000E 01 | 8.4169E-02 | -2.8137E-02 | 8.8747E-02 | -3.2261E-01 |
| 2.3000E 01 | -8.1422E-02 | 1.5349E-02 | 8.2856E-02 | -1.8632E-01 |
| 2.5000E 01 | 4.6099E-02 | 6.4793E-02 | 7.9519E-02 | 9.5240E-01 |
| 2.8000E 01 | -3.4745E-02 | -6.6678E-02 | 7.5188E-02 | 1.0904E 00 |
| 3.0000E 01 | -4.4507E-02 | 5.7437E-02 | 7.2663E-02 | -9.1156E-01 |
| 3.3000E 01 | 4.9636E-02 | -4.8374E-02 | 6.9309E-02 | -7.7253E-01 |
| 3.5000E 01 | -6.2817E-02 | -2.4191E-02 | 6.7314E-02 | 3.6760E-01 |
| 4.0000E 01 | 4.8432E-03 | -6.2805E-02 | 6.2992E-02 | -1.4938E 00 |
| 4.5000E 01 | 5.8063E-02 | -1.2560E-02 | 5.9406E-02 | -2.1304E-01 |
| 5.0000E 01 | 2.7151E-02 | 4.9399E-02 | 5.6369E-02 | 1.0682E 00 |

CASE III

$\phi = 150^{\circ}$ $\psi = 150^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 1.2015E 00 | -3.5912E-03 | 1.2011E 00 | -2.9899E-03 |
| 2.0000E-02 | 1.2025E 00 | -8.2545E-03 | 1.2026E 00 | -6.8640E-03 |
| 4.0000E-02 | 1.2056E 00 | -1.8983E-02 | 1.2058E 00 | -1.5745E-02 |
| 6.0000E-02 | 1.2088E 00 | -3.0914E-02 | 1.2092E 00 | -2.5569E-02 |
| 1.0000E-01 | 1.2150E 00 | -5.7185E-02 | 1.2163E 00 | -4.7032E-02 |
| 2.0000E-01 | 1.2277E 00 | -1.3197E-01 | 1.2348E 00 | -1.0708E-01 |
| 3.0000E-01 | 1.2346E 00 | -2.1530E-01 | 1.2532E 00 | -1.7266E-01 |
| 4.0000E-01 | 1.2343E 00 | -3.0437E-01 | 1.2713E 00 | -2.4176E-01 |
| 5.0000E-01 | 1.2262E 00 | -3.9739E-01 | 1.2890E 00 | -3.1341E-01 |
| 6.0000E-01 | 1.2096E 00 | -4.9297E-01 | 1.3062E 00 | -3.8699E-01 |
| 7.0000E-01 | 1.1843E 00 | -5.8987E-01 | 1.3230E 00 | -4.6212E-01 |
| 8.0000E-01 | 1.1499E 00 | -6.8694E-01 | 1.3394E 00 | -5.3852E-01 |
| 9.0000E-01 | 1.1063E 00 | -7.8309E-01 | 1.3554E 00 | -6.1597E-01 |
| 1.0000E 00 | 1.0536E 00 | -8.7729E-01 | 1.3711E 00 | -6.9432E-01 |
| 1.4000E 00 | 7.5518E-01 | -1.2147E 00 | 1.4303E 00 | -1.0146E 00 |
| 2.0000E 00 | 9.3784E-02 | -1.5083E 00 | 1.5112E 00 | -1.5087E 00 |
| 2.4000E 00 | -4.2118E-01 | -1.5030E 00 | 1.5609E 00 | 1.2976E 00 |
| 3.0000E 00 | -1.1490E 00 | -1.1566E 00 | 1.6303E 00 | 7.8869E-01 |
| 3.4000E 00 | -1.5095E 00 | -7.2260E-01 | 1.6736E 00 | 4.4646E-01 |
| 4.0000E 00 | -1.7303E 00 | 1.2169E-01 | 1.7346E 00 | -7.0209E-02 |
| 4.4000E 00 | -1.6214E 00 | 7.1718E-01 | 1.7730E 00 | -4.1644E-01 |
| 5.0000E 00 | -1.0808E 00 | 1.4734E 00 | 1.8273E 00 | -9.3791E-01 |
| 6.0000E 00 | 4.5526E-01 | 1.8550E 00 | 1.9101E 00 | 1.3301E 00 |
| 7.0000E 00 | 1.7843E 00 | 8.6741E-01 | 1.9840E 00 | 4.5249E-01 |
| 8.0000E 00 | 1.8647E 00 | -8.5094E-01 | 2.0496E 00 | -4.2812E-01 |
| 9.0000E 00 | 5.4153E-01 | -2.0368E 00 | 2.1076E 00 | -1.3109E 00 |
| 1.0000E 01 | -1.2619E 00 | -1.7507E 00 | 2.1581E 00 | 9.4623E-01 |
| 1.3000E 01 | 3.2083E-01 | 2.2449E 00 | 2.2677E 00 | 1.4288E 00 |
| 1.5000E 01 | 2.1716E 00 | -7.8207E-01 | 2.3081E 00 | -3.4567E-01 |
| 1.8000E 01 | -2.3029E 00 | -3.1432E-01 | 2.3242E 00 | 1.3565E-01 |
| 2.0000E 01 | 1.4761E-01 | 2.3036E 00 | 2.3084E 00 | 1.5068E 00 |
| 2.3000E 01 | 9.3808E-01 | -2.0464E 00 | 2.2512E 00 | -1.1410E 00 |
| 2.5000E 01 | -2.1312E 00 | -5.2725E-01 | 2.1955E 00 | 2.4253E-01 |
| 2.8000E 01 | 1.5174E 00 | 1.4443E 00 | 2.0949E 00 | 7.6071E-01 |
| 3.0000E 01 | 1.1310E 00 | -1.6772E 00 | 2.0229E 00 | -9.7751E-01 |
| 3.3000E 01 | -1.7483E 00 | 7.9223E-01 | 1.9194E 00 | -4.2546E-01 |
| 3.5000E 01 | 1.0029E 00 | 1.5671E 00 | 1.8605E 00 | 1.0015E 00 |
| 4.0000E 01 | -1.7667E 00 | 2.0006E-01 | 1.7780E 00 | -1.1276E-01 |
| 4.5000E 01 | 6.2113E-01 | -1.6975E 00 | 1.8076E 00 | -1.2200E 00 |
| 5.0000E 01 | 1.3683E 00 | 1.3479E 00 | 1.9207E 00 | 7.7786E-01 |

CASE III

$\phi = 150^{\circ}$ $\psi = 150^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | 1.3349E-01 | -4.3111E-01 | 4.5131E-01 | -1.2705E 00 |
| 2.0000E-02 | 1.4752E-01 | -4.9568E-01 | 5.1717E-01 | -1.2815E 00 |
| 4.0000E-02 | 1.5733E-01 | -5.7051E-01 | 5.9181E-01 | -1.3017E 00 |
| 6.0000E-02 | 1.5830E-01 | -6.1993E-01 | 6.3982E-01 | -1.3208E 00 |
| 1.0000E-01 | 1.4936E-01 | -6.8915E-01 | 7.0515E-01 | -1.3574E 00 |
| 2.0000E-01 | 1.0074E-01 | -7.9679E-01 | 8.0313E-01 | -1.4450E 00 |
| 3.0000E-01 | 3.4792E-02 | -8.6545E-01 | 8.6615E-01 | -1.5306E 00 |
| 4.0000E-01 | -4.0795E-02 | -9.1304E-01 | 9.1395E-01 | 1.5261E 00 |
| 5.0000E-01 | -1.2279E-01 | -9.4520E-01 | 9.5314E-01 | 1.4416E 00 |
| 6.0000E-01 | -2.0921E-01 | -9.6434E-01 | 9.8677E-01 | 1.3572E 00 |
| 7.0000E-01 | -2.9857E-01 | -9.7167E-01 | 1.0165E 00 | 1.2727E 00 |
| 8.0000E-01 | -3.8959E-01 | -9.6789E-01 | 1.0434E 00 | 1.1881E 00 |
| 9.0000E-01 | -4.8113E-01 | -9.5345E-01 | 1.0680E 00 | 1.1035E 00 |
| 1.0000E 00 | -5.7213E-01 | -9.2873E-01 | 1.0908E 00 | 1.0187E 00 |
| 1.4000E 00 | -9.1095E-01 | -7.3385E-01 | 1.1698E 00 | 6.7814E-01 |
| 2.0000E 00 | -1.2490E 00 | -2.0600E-01 | 1.2659E 00 | 1.6346E-01 |
| 2.4000E 00 | -1.2992E 00 | 2.3890E-01 | 1.3210E 00 | -1.8185E-01 |
| 3.0000E 00 | -1.0647E 00 | 9.0127E-01 | 1.3949E 00 | -7.0246E-01 |
| 3.4000E 00 | -7.1516E-01 | 1.2496E 00 | 1.4398E 00 | -1.0510E 00 |
| 4.0000E 00 | 7.2226E-03 | 1.5018E 00 | 1.5018E 00 | 1.5660E 00 |
| 4.4000E 00 | 5.3618E-01 | 1.4439E 00 | 1.5402E 00 | 1.2152E 00 |
| 5.0000E 00 | 1.2315E 00 | 1.0119E 00 | 1.5940E 00 | 6.8782E-01 |
| 6.0000E 00 | 1.6433E 00 | -3.2278E-01 | 1.6747E 00 | -1.9395E-01 |
| 7.0000E 00 | 8.2537E-01 | -1.5384E 00 | 1.7459E 00 | -1.0784E 00 |
| 8.0000E 00 | -6.9423E-01 | -1.6699E 00 | 1.8085E 00 | 1.1768E 00 |
| 9.0000E 00 | -1.7860E 00 | -5.3089E-01 | 1.8632E 00 | 2.8893E-01 |
| 1.0000E 01 | -1.5769E 00 | 1.0789E 00 | 1.9106E 00 | -6.0002E-01 |
| 1.3000E 01 | 1.9953E 00 | -2.5835E-01 | 2.0119E 00 | -1.2877E-01 |
| 1.5000E 01 | -6.8068E-01 | -1.9315E 00 | 2.0479E 00 | 1.2320E 00 |
| 1.8000E 01 | -2.7561E-01 | 2.0407E 00 | 2.0593E 00 | -1.4366E 00 |
| 2.0000E 01 | 2.0364E 00 | -1.4325E-01 | 2.0414E 00 | -7.0231E-02 |
| 2.3000E 01 | -1.8125E 00 | -8.0357E-01 | 1.9826E 00 | 4.1732E-01 |
| 2.5000E 01 | -4.3285E-01 | 1.8772E 00 | 1.9264E 00 | -1.3442E 00 |
| 2.8000E 01 | 1.2327E 00 | -1.3468E 00 | 1.8258E 00 | -8.2957E-01 |
| 3.0000E 01 | -1.4739E 00 | -9.5048E-01 | 1.7538E 00 | 5.7276E-01 |
| 3.3000E 01 | 7.1018E-01 | 1.4896E 00 | 1.6502E 00 | 1.1259E 00 |
| 3.5000E 01 | 1.3258E 00 | -8.7986E-01 | 1.5912E 00 | -5.8591E-01 |
| 4.0000E 01 | 1.7511E-01 | 1.4989E 00 | 1.5091E 00 | 1.4545E 00 |
| 4.5000E 01 | -1.4415E 00 | -5.4458E-01 | 1.5409E 00 | 3.6122E-01 |
| 5.0000E 01 | 1.1811E 00 | -1.1607E 00 | 1.6560E 00 | -7.7671E-01 |

CASE III

$\phi = 160^{\circ}$ $\psi = 160^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 1.1260E 00 | -5.3727E-03 | 1.1260E 00 | -4.7713E-03 |
| 2.0000E-02 | 1.1272E 00 | -1.1723E-02 | 1.1273E 00 | -1.0400E-02 |
| 4.0000E-02 | 1.1295E 00 | -2.5592E-02 | 1.1298E 00 | -2.2654E-02 |
| 6.0000E-02 | 1.1317E 00 | -4.0420E-02 | 1.1324E 00 | -3.5701E-02 |
| 1.0000E-01 | 1.1354E 00 | -7.1923E-02 | 1.1377E 00 | -6.3259E-02 |
| 2.0000E-01 | 1.1401E 00 | -1.5728E-01 | 1.1509E 00 | -1.3709E-01 |
| 3.0000E-01 | 1.1368E 00 | -2.4825E-01 | 1.1636E 00 | -2.1500E-01 |
| 4.0000E-01 | 1.1249E 00 | -3.4237E-01 | 1.1758E 00 | -2.9546E-01 |
| 5.0000E-01 | 1.1039E 00 | -4.3796E-01 | 1.1876E 00 | -3.7770E-01 |
| 6.0000E-01 | 1.0736E 00 | -5.3366E-01 | 1.1990E 00 | -4.6129E-01 |
| 7.0000E-01 | 1.0340E 00 | -6.2824E-01 | 1.2099E 00 | -5.4595E-01 |
| 8.0000E-01 | 9.8520E-01 | -7.2056E-01 | 1.2206E 00 | -6.3148E-01 |
| 9.0000E-01 | 9.2725E-01 | -8.0955E-01 | 1.2309E 00 | -7.1773E-01 |
| 1.0000E 00 | 8.6049E-01 | -8.9418E-01 | 1.2410E 00 | -8.0460E-01 |
| 1.4000E 00 | 5.1451E-01 | -1.1707E 00 | 1.2788E 00 | -1.1567E 00 |
| 2.0000E 00 | -1.6382E-01 | -1.3199E 00 | 1.3300E 00 | 1.4473E 00 |
| 2.4000E 00 | -6.3580E-01 | -1.2039E 00 | 1.3615E 00 | 1.0849E 00 |
| 3.0000E 00 | -1.2075E 00 | -7.1919E-01 | 1.4055E 00 | 5.3717E-01 |
| 3.4000E 00 | -1.4125E 00 | -2.4237E-01 | 1.4331E 00 | 1.6994E-01 |
| 4.0000E 00 | -1.3656E 00 | 5.5066E-01 | 1.4725E 00 | -3.8329E-01 |
| 4.4000E 00 | -1.0922E 00 | 1.0245E 00 | 1.4975E 00 | -7.5340E-01 |
| 5.0000E 00 | -3.9521E-01 | 1.4817E 00 | 1.5335E 00 | -1.3101E 00 |
| 6.0000E 00 | 9.8804E-01 | 1.2456E 00 | 1.5899E 00 | 9.0021E-01 |
| 7.0000E 00 | 1.6416E 00 | -5.6293E-02 | 1.6425E 00 | -3.4279E-02 |
| 8.0000E 00 | 9.5471E-01 | -1.3969E 00 | 1.6920E 00 | -9.7126E-01 |
| 9.0000E 00 | -5.7886E-01 | -1.6394E 00 | 1.7386E 00 | 1.2314E 00 |
| 1.0000E 01 | -1.7078E 00 | -5.1112E-01 | 1.7827E 00 | 2.9079E-01 |
| 1.3000E 01 | 1.5658E 00 | 1.0792E 00 | 1.9017E 00 | 6.0345E-01 |
| 1.5000E 01 | 5.5223E-01 | -1.8923E 00 | 1.9713E 00 | -1.2869E 00 |
| 1.8000E 01 | -1.1398E 00 | 1.7188E 00 | 2.0624E 00 | -9.8522E-01 |
| 2.0000E 01 | 2.0436E 00 | 5.4591E-01 | 2.1152E 00 | 2.6104E-01 |
| 2.3000E 01 | -1.8524E 00 | -1.1545E 00 | 2.1827E 00 | 5.5732E-01 |
| 2.5000E 01 | -5.0664E-01 | 2.1618E 00 | 2.2204E 00 | -1.3406E 00 |
| 2.8000E 01 | 1.1338E 00 | -1.9623E 00 | 2.2663E 00 | -1.0469E 00 |
| 3.0000E 01 | -2.2464E 00 | -4.4554E-01 | 2.2901E 00 | 1.9580E-01 |
| 3.3000E 01 | 2.0447E 00 | 1.0876E 00 | 2.3160E 00 | 4.8885E-01 |
| 3.5000E 01 | 3.7237E-01 | -2.2970E 00 | 2.3270E 00 | -1.4101E 00 |
| 4.0000E 01 | 2.3149E 00 | 2.9604E-01 | 2.3337E 00 | 1.2720E-01 |
| 4.5000E 01 | -2.2453E-01 | 2.3026E 00 | 2.3135E 00 | -1.4736E 00 |
| 5.0000E 01 | -2.2641E 00 | -1.6466E-01 | 2.2701E 00 | 7.2599E-02 |

CASE III

$\phi = 160^{\circ}$ $\psi = 160^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | 1.1333E-01 | -6.0466E-01 | 6.1519E-01 | -1.3855E 00 |
| 2.0000E-02 | 1.1688E-01 | -6.5997E-01 | 6.7024E-01 | -1.3955E 00 |
| 4.0000E-02 | 1.1343E-01 | -7.2095E-01 | 7.2981E-01 | -1.4147E 00 |
| 6.0000E-02 | 1.0493E-01 | -7.5962E-01 | 7.6684E-01 | -1.4335E 00 |
| 1.0000E-01 | 8.1724E-02 | -8.1176E-01 | 8.1587E-01 | -1.4705E 00 |
| 2.0000E-01 | 8.3752E-03 | -8.8702E-01 | 8.8706E-01 | -1.5614E 00 |
| 3.0000E-01 | -7.5173E-02 | -9.2865E-01 | 9.3169E-01 | 1.4900E 00 |
| 4.0000E-01 | -1.6406E-01 | -9.5102E-01 | 9.6507E-01 | 1.4000E 00 |
| 5.0000E-01 | -2.5594E-01 | -9.5859E-01 | 9.9217E-01 | 1.3099E 00 |
| 6.0000E-01 | -3.4917E-01 | -9.5333E-01 | 1.0153E 00 | 1.2197E 00 |
| 7.0000E-01 | -4.4239E-01 | -9.3633E-01 | 1.0356E 00 | 1.1294E 00 |
| 8.0000E-01 | -5.3440E-01 | -9.0828E-01 | 1.0538E 00 | 1.0390E 00 |
| 9.0000E-01 | -6.2409E-01 | -8.6977E-01 | 1.0705E 00 | 9.4840E-01 |
| 1.0000E 00 | -7.1041E-01 | -8.2133E-01 | 1.0859E 00 | 8.5768E-01 |
| 1.4000E 00 | -1.0031E 00 | -5.3957E-01 | 1.1390E 00 | 4.9350E-01 |
| 2.0000E 00 | -1.2013E 00 | 6.7497E-02 | 1.2032E 00 | -5.6125E-02 |
| 2.4000E 00 | -1.1301E 00 | 5.1057E-01 | 1.2401E 00 | -4.2434E-01 |
| 3.0000E 00 | -7.1973E-01 | 1.0702E 00 | 1.2897E 00 | -9.7875E-01 |
| 3.4000E 00 | -2.8957E-01 | 1.2878E 00 | 1.3199E 00 | -1.3496E 00 |
| 4.0000E 00 | 4.4976E-01 | 1.2858E 00 | 1.3622E 00 | 1.2343E 00 |
| 4.4000E 00 | 9.0422E-01 | 1.0539E 00 | 1.3887E 00 | 8.6170E-01 |
| 5.0000E 00 | 1.3618E 00 | 4.2383E-01 | 1.4263E 00 | 3.0172E-01 |
| 6.0000E 00 | 1.1960E 00 | -8.7923E-01 | 1.4844E 00 | -6.3392E-01 |
| 7.0000E 00 | -1.7511E-03 | -1.5380E 00 | 1.5380E 00 | 1.5697E 00 |
| 8.0000E 00 | -1.2833E 00 | -9.3517E-01 | 1.5879E 00 | 6.2975E-01 |
| 9.0000E 00 | -1.5558E 00 | 5.0130E-01 | 1.6346E 00 | -3.1170E-01 |
| 1.0000E 01 | -5.2221E-01 | 1.5953E 00 | 1.6786E 00 | -1.2544E 00 |
| 1.3000E 01 | 1.0494E 00 | -1.4580E 00 | 1.7964E 00 | -9.4695E-01 |
| 1.5000E 01 | -1.7806E 00 | -5.5397E-01 | 1.8648E 00 | 3.0162E-01 |
| 1.8000E 01 | 1.6131E 00 | 1.1032E 00 | 1.9542E 00 | 5.9986E-01 |
| 2.0000E 01 | 5.4148E-01 | -1.9310E 00 | 2.0054E 00 | -1.2974E 00 |
| 2.3000E 01 | -1.1126E 00 | 1.7468E 00 | 2.0710E 00 | -1.0037E 00 |
| 2.5000E 01 | 2.0479E 00 | 4.9781E-01 | 2.1075E 00 | 2.3846E-01 |
| 2.8000E 01 | -1.8564E 00 | -1.0880E 00 | 2.1517E 00 | 5.3010E-01 |
| 3.0000E 01 | -4.3342E-01 | 2.1309E 00 | 2.1745E 00 | -1.3701E 00 |
| 3.3000E 01 | 1.0385E 00 | -1.9383E 00 | 2.1990E 00 | -1.0789E 00 |
| 3.5000E 01 | -2.1801E 00 | -3.5774E-01 | 2.2093E 00 | 1.6264E-01 |
| 4.0000E 01 | 2.7946E-01 | -2.1967E 00 | 2.2144E 00 | -1.4443E 00 |
| 4.5000E 01 | 2.1835E 00 | 2.0639E-01 | 2.1932E 00 | 9.4244E-02 |
| 5.0000E 01 | -1.4522E-01 | 2.1443E 00 | 2.1492E 00 | -1.5032E 00 |

CASE III

$\phi = 170^{\circ}$ $\psi = 170^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 1.0595E 00 | -7.5242E-03 | 1.0595E 00 | -7.1017E-03 |
| 2.0000E-02 | 1.0601E 00 | -1.5679E-02 | 1.0602E 00 | -1.4789E-02 |
| 4.0000E-02 | 1.0612E 00 | -3.2681E-02 | 1.0617E 00 | -3.0787E-02 |
| 6.0000E-02 | 1.0620E 00 | -5.0226E-02 | 1.0631E 00 | -4.7261E-02 |
| 1.0000E-01 | 1.0625E 00 | -8.6312E-02 | 1.0660E 00 | -8.1056E-02 |
| 2.0000E-01 | 1.0577E 00 | -1.7970E-01 | 1.0728E 00 | -1.6829E-01 |
| 3.0000E-01 | 1.0436E 00 | -2.7509E-01 | 1.0792E 00 | -2.5774E-01 |
| 4.0000E-01 | 1.0200E 00 | -3.7063E-01 | 1.0853E 00 | -3.4852E-01 |
| 5.0000E-01 | 9.8700E-01 | -4.6493E-01 | 1.0910E 00 | -4.4022E-01 |
| 6.0000E-01 | 9.4461E-01 | -5.5679E-01 | 1.0965E 00 | -5.3262E-01 |
| 7.0000E-01 | 8.9312E-01 | -6.4514E-01 | 1.1018E 00 | -6.2556E-01 |
| 8.0000E-01 | 8.3287E-01 | -7.2893E-01 | 1.1068E 00 | -7.1895E-01 |
| 9.0000E-01 | 7.6433E-01 | -8.0724E-01 | 1.1117E 00 | -8.1270E-01 |
| 1.0000E 00 | 6.8804E-01 | -8.7917E-01 | 1.1164E 00 | -9.0676E-01 |
| 1.4000E 00 | 3+1931E-01 | -1.0881E 00 | 1.1340E 00 | -1.2852E 00 |
| 2.0000E 00 | -3.2782E-01 | -1.1100E 00 | 1.1574E 00 | 1.2836E 00 |
| 2.4000E 00 | -7.2845E-01 | -9.1766E-01 | 1.1716E 00 | 8.8984E-01 |
| 3.0000E 00 | -1.1302E 00 | -3.7710E-01 | 1.1914E 00 | 3.2205E-01 |
| 3.4000E 00 | -1.2012E 00 | 7.7238E-02 | 1.2038E 00 | -6.4207E-02 |
| 4.0000E 00 | -9+7611E-01 | 7+3410E-01 | 1.2212E 00 | -6.4482E-01 |
| 4.4000E 00 | -6.3179E-01 | 1.0582E 00 | 1.2325E 00 | -1.0326E 00 |
| 5.0000E 00 | 5.5200E-02 | 1.2473E 00 | 1.2485E 00 | 1.5266E 00 |
| 6.0000E 00 | 1.0831E 00 | 6.7007E-01 | 1.2736E 00 | 5.5404E-01 |
| 7.0000E 00 | 1.1843E 00 | -5.2919E-01 | 1.2971E 00 | -4.2023E-01 |
| 8.0000E 00 | 2.2961E-01 | -1.2992E 00 | 1.3194E 00 | -1.3959E 00 |
| 9.0000E 00 | -9.6335E-01 | -9.3221E-01 | 1.3405E 00 | 7.6898E-01 |
| 1.0000E 01 | -1.3313E 00 | 2.8193E-01 | 1.3608E 00 | -2.0869E-01 |
| 1.3000E 01 | 1.4173E 00 | -6.1308E-03 | 1.4173E 00 | -4.3255E-03 |
| 1.5000E 01 | -5.5798E-01 | -1.3407E 00 | 1.4522E 00 | 1.1764E 00 |
| 1.8000E 01 | 2.9389E-01 | 1.4721E 00 | 1.5011E 00 | 1.3737E 00 |
| 2.0000E 01 | 1.2723E 00 | -8.5314E-01 | 1.5319E 00 | -5.9068E-01 |
| 2.3000E 01 | -1.4528E 00 | 6.1014E-01 | 1.5758E 00 | -3.9759E-01 |
| 2.5000E 01 | 1.1431E 00 | 1.1247E 00 | 1.6037E 00 | 7.7727E-01 |
| 2.8000E 01 | -9.3264E-01 | -1.3535E 00 | 1.6437E 00 | 9.6746E-01 |
| 3.0000E 01 | -9.0070E-01 | 1.4055E 00 | 1.6694E 00 | -1.0009E 00 |
| 3.3000E 01 | 1.1731E 00 | -1.2392E 00 | 1.7064E 00 | -8.1281E-01 |
| 3.5000E 01 | -1.6197E 00 | -6.0819E-01 | 1.7301E 00 | 3.5921E-01 |
| 4.0000E 01 | 2.5986E-01 | -1.7676E 00 | 1.7866E 00 | -1.4248E 00 |
| 4.5000E 01 | 1.8349E 00 | -1.2735E-01 | 1.8393E 00 | -6.9291E-02 |
| 5.0000E 01 | 5.3312E-01 | 1.8118E 00 | 1.8886E 00 | 1.2846E 00 |

CASE III

$\phi = 170^{\circ}$ $\psi = 170^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | 6.5858E-02 | -7.9691E-01 | 7.9962E-01 | -1.4883E 00 |
| 2.0000E-02 | 6.0531E-02 | -8.3053E-01 | 8.3273E-01 | -1.4980E 00 |
| 4.0000E-02 | 4.6385E-02 | -8.6587E-01 | 8.6711E-01 | -1.5173E 00 |
| 6.0000E-02 | 3.0520E-02 | -8.8730E-01 | 8.8783E-01 | -1.5364E 00 |
| 1.0000E-01 | -3.4428E-03 | -9.1460E-01 | 9.1461E-01 | 1.5670E 00 |
| 2.0000E-01 | -9.4040E-02 | -9.4772E-01 | 9.5237E-01 | 1.4719E 00 |
| 3.0000E-01 | -1.8808E-01 | -9.5717E-01 | 9.7547E-01 | 1.3768E 00 |
| 4.0000E-01 | -2.8306E-01 | -9.5128E-01 | 9.9251E-01 | 1.2816E 00 |
| 5.0000E-01 | -3.7743E-01 | -9.3272E-01 | 1.0062E 00 | 1.1863E 00 |
| 6.0000E-01 | -4.6992E-01 | -9.0278E-01 | 1.0178E 00 | 1.0909E 00 |
| 7.0000E-01 | -5.5938E-01 | -8.6233E-01 | 1.0279E 00 | 9.9535E-01 |
| 8.0000E-01 | -6.4477E-01 | -8.1205E-01 | 1.0369E 00 | 8.9972E-01 |
| 9.0000E-01 | -7.2513E-01 | -7.5262E-01 | 1.0451E 00 | 8.0400E-01 |
| 1.0000E 00 | -7.9955E-01 | -6.8471E-01 | 1.0527E 00 | 7.0818E-01 |
| 1.4000E 00 | -1.0223E 00 | -3.4343E-01 | 1.0784E 00 | 3.2410E-01 |
| 2.0000E 00 | -1.0735E 00 | 2.7868E-01 | 1.1091E 00 | -2.5398E-01 |
| 2.4000E 00 | -9.0333E-01 | 6.7312E-01 | 1.1265E 00 | -6.4039E-01 |
| 3.0000E 00 | -3.9383E-01 | 1.0802E 00 | 1.1498E 00 | -1.2212E 00 |
| 3.4000E 00 | 4.4518E-02 | 1.1631E 00 | 1.1639E 00 | 1.5325E 00 |
| 4.0000E 00 | 6.8849E-01 | 9.6267E-01 | 1.1835E 00 | 9.4995E-01 |
| 4.4000E 00 | 1.0124E 00 | 6.3630E-01 | 1.1958E 00 | 5.6110E-01 |
| 5.0000E 00 | 1.2129E 00 | -2.7619E-02 | 1.2132E 00 | -2.2768E-02 |
| 6.0000E 00 | 6.7293E-01 | -1.0416E 00 | 1.2401E 00 | -9.9720E-01 |
| 7.0000E 00 | -4.9511E-01 | -1.1640E 00 | 1.2649E 00 | 1.1686E 00 |
| 8.0000E 00 | -1.2646E 00 | -2.4551E-01 | 1.2882E 00 | 1.9176E-01 |
| 9.0000E 00 | -9.2587E-01 | 9.2701E-01 | 1.3102E 00 | -7.8601E-01 |
| 1.0000E 01 | 2.5630E-01 | 1.3062E 00 | 1.3311E 00 | 1.3770E 00 |
| 1.3000E 01 | 1.1916E-02 | -1.3890E 00 | 1.3891E 00 | -1.5622E 00 |
| 1.5000E 01 | -1.3215E 00 | 5.3167E-01 | 1.4245E 00 | -3.8250E-01 |
| 1.8000E 01 | 1.4485E 00 | -2.7314E-01 | 1.4741E 00 | -1.8638E-01 |
| 2.0000E 01 | -8.2568E-01 | -1.2584E 00 | 1.5051E 00 | 9.9013E-01 |
| 2.3000E 01 | 5.8677E-01 | 1.4339E 00 | 1.5493E 00 | 1.1824E 00 |
| 2.5000E 01 | 1.1160E 00 | -1.1147E 00 | 1.5773E 00 | -7.8484E-01 |
| 2.8000E 01 | -1.3393E 00 | 9.0702E-01 | 1.6175E 00 | -5.9528E-01 |
| 3.0000E 01 | 1.3767E 00 | 8.9720E-01 | 1.6432E 00 | 5.7758E-01 |
| 3.3000E 01 | -1.2119E 00 | -1.1638E 00 | 1.6803E 00 | 7.6516E-01 |
| 3.5000E 01 | -6.0996E-01 | 1.5911E 00 | 1.7040E 00 | -1.2047E 00 |
| 4.0000E 01 | -1.7401E 00 | -2.6684E-01 | 1.7604E 00 | 1.5216E-01 |
| 4.5000E 01 | -1.1536E-01 | -1.8094E 00 | 1.8131E 00 | 1.5071E 00 |
| 5.0000E 01 | 1.7891E 00 | -5.1651E-01 | 1.8622E 00 | -2.8105E-01 |

CASE III

$\phi = 175^{\circ}$ $\psi = 175^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 1.0289E 00 | -8.7250E-03 | 1.0290E 00 | -8.4796E-03 |
| 2.0000E-02 | 1.0292E 00 | -1.7802E-02 | 1.0293E 00 | -1.7295E-02 |
| 4.0000E-02 | 1.0295E 00 | -3.6323E-02 | 1.0301E 00 | -3.5268E-02 |
| 6.0000E-02 | 1.0294E 00 | -5.5124E-02 | 1.0309E 00 | -5.3499E-02 |
| 1.0000E-01 | 1.0281E 00 | -9.3207E-02 | 1.0323E 00 | -9.0410E-02 |
| 2.0000E-01 | 1.0183E 00 | -1.8964E-01 | 1.0358E 00 | -1.8412E-01 |
| 3.0000E-01 | 9.9882E-01 | -2.8611E-01 | 1.0390E 00 | -2.7898E-01 |
| 4.0000E-01 | 9.6975E-01 | -3.8116E-01 | 1.0420E 00 | -3.7450E-01 |
| 5.0000E-01 | 9.3125E-01 | -4.7363E-01 | 1.0448E 00 | -4.7050E-01 |
| 6.0000E-01 | 8.8362E-01 | -5.6246E-01 | 1.0474E 00 | -5.6685E-01 |
| 7.0000E-01 | 8.2725E-01 | -6.4665E-01 | 1.0500E 00 | -6.6347E-01 |
| 8.0000E-01 | 7.6262E-01 | -7.2529E-01 | 1.0524E 00 | -7.6032E-01 |
| 9.0000E-01 | 6.9031E-01 | -7.9753E-01 | 1.0548E 00 | -8.5734E-01 |
| 1.0000E 00 | 6.1098E-01 | -8.6260E-01 | 1.0571E 00 | -9.5452E-01 |
| 1.4000E 00 | 2.3913E-01 | -1.0383E 00 | 1.0654E 00 | -1.3444E 00 |
| 2.0000E 00 | -3.8009E-01 | -1.0072E 00 | 1.0765E 00 | 1.2099E 00 |
| 2.4000E 00 | -7.4101E-01 | -7.9009E-01 | 1.0832E 00 | 8.1744E-01 |
| 3.0000E 00 | -1.0643E 00 | -2.4653E-01 | 1.0924E 00 | 2.2763E-01 |
| 3.4000E 00 | -1.0831E 00 | 1.8158E-01 | 1.0982E 00 | -1.6611E-01 |
| 4.0000E 00 | -8.0390E-01 | 7.6000E-01 | 1.1063E 00 | -7.5734E-01 |
| 4.4000E 00 | -4.5213E-01 | 1.0153E 00 | 1.1114E 00 | -1.1518E 00 |
| 5.0000E 00 | 1.9279E-01 | 1.1020E 00 | 1.1187E 00 | 1.3976E 00 |
| 6.0000E 00 | 1.0366E 00 | 4.5026E-01 | 1.1302E 00 | 4.0977E-01 |
| 7.0000E 00 | 9.5492E-01 | -6.2419E-01 | 1.1408E 00 | -5.7894E-01 |
| 8.0000E 00 | 2.8118E-03 | -1.1509E 00 | 1.1509E 00 | -1.5684E 00 |
| 9.0000E 00 | -9.6852E-01 | -6.3907E-01 | 1.1604E 00 | 5.8326E-01 |
| 1.0000E 01 | -1.0738E 00 | 4.6313E-01 | 1.1694E 00 | -4.0718E-01 |
| 1.3000E 01 | 1.1606E 00 | -2.8294E-01 | 1.1946E 00 | -2.3913E-01 |
| 1.5000E 01 | -7.3430E-01 | -9.6174E-01 | 1.2100E 00 | 9.1871E-01 |
| 1.8000E 01 | 5.7714E-01 | 1.0880E 00 | 1.2316E 00 | 1.0831E 00 |
| 2.0000E 01 | 7.7156E-01 | -9.7738E-01 | 1.2452E 00 | -9.0254E-01 |
| 2.3000E 01 | -9.3351E-01 | 8.5310E-01 | 1.2646E 00 | -7.4042E-01 |
| 2.5000E 01 | 1.1689E 00 | 5.1403E-01 | 1.2770E 00 | 4.1429E-01 |
| 2.8000E 01 | -1.0866E 00 | -7.0396E-01 | 1.2947E 00 | 5.7485E-01 |
| 3.0000E 01 | -2.0535E-01 | 1.2899E 00 | 1.3062E 00 | -1.4129E 00 |
| 3.3000E 01 | 4.1265E-01 | -1.2568E 00 | 1.3228E 00 | -1.2535E 00 |
| 3.5000E 01 | -1.3268E 00 | 1.3367E-01 | 1.3335E 00 | -1.0041E-01 |
| 4.0000E 01 | -4.7902E-01 | -1.2721E 00 | 1.3593E 00 | 1.2107E 00 |
| 4.5000E 01 | 1.1254E 00 | -8.0522E-01 | 1.3838E 00 | -6.2106E-01 |
| 5.0000E 01 | 1.0873E 00 | 8.9340E-01 | 1.4072E 00 | 6.8783E-01 |

CASE III

$\phi = 175^{\circ}$ $\psi = 175^{\circ}$ $\psi$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | 3 1459E-02 | -8.9757E-01 | 8.9812E-01 | -1.5358E 00 |
| 2.0000E-02 | 2.3127E-02 | -9.1575E-01 | 9.1605E-01 | -1.5455E 00 |
| 4.0000E-02 | 5.3404E-03 | -9.3429E-01 | 9.3431E-01 | -1.5651E 00 |
| 6.0000E-02 | -1.3040E-02 | -9.4507E-01 | 9.4516E-01 | 1.5570E 00 |
| 1.0000E-01 | -5.0617E-02 | -9.5769E-01 | 9.5903E-01 | 1.5180E 00 |
| 2.0000E-01 | -1.4651E-01 | -9.6728E-01 | 9.7831E-01 | 1.4205E 00 |
| 3.0000E-01 | -2.4291E-01 | -9.5971E-01 | 9.8998E-01 | 1.3229E 00 |
| 4.0000E-01 | -3.3821E-01 | -9.3949E-01 | 9.9851E-01 | 1.2252E 00 |
| 5.0000E-01 | -4.3118E-01 | -9.0817E-01 | 1.0053E 00 | 1.1275E 00 |
| 6.0000E-01 | -5.2075E-01 | -8.6665E-01 | 1.0111E 00 | 1.0297E 00 |
| 7.0000E-01 | -6.0592E-01 | -8.1563E-01 | 1.0161E 00 | 9.3187E-01 |
| 8.0000E-01 | -6.8574E-01 | -7.5578E-01 | 1.0205E 00 | 8.3395E-01 |
| 9.0000E-01 | -7.5937E-01 | -6.8778E-01 | 1.0245E 00 | 7.3597E-01 |
| 1.0000E 00 | -8.2601E-01 | -6.1237E-01 | 1.0282E 00 | 6.3795E-01 |
| 1.4000E 00 | -1.0096E 00 | -2.5286E-01 | 1.0408E 00 | 2.4541E-01 |
| 2.0000E 00 | -9.9357E-01 | 3.5644E-01 | 1.0556E 00 | -3.4444E-01 |
| 2.4000E 00 | -7.8693E-01 | 7.1596E-01 | 1.0639E 00 | -7.3821E-01 |
| 3.0000E 00 | -2.5690E-01 | 1.0438E 00 | 1.0749E 00 | -1.3295E 00 |
| 3.4000E 00 | 1.6503E-01 | 1.0689E 00 | 1.0816E 00 | 1.4176E 00 |
| 4.0000E 00 | 7.3981E-01 | 8.0155E-01 | 1.0908E 00 | 8.2544E-01 |
| 4.4000E 00 | 9.9650E-01 | 4.5751E-01 | 1.0965E 00 | 4.3041E-01 |
| 5.0000E 00 | 1.0901E 00 | -1.7862E-01 | 1.1046E 00 | -1.6242E-01 |
| 6.0000E 00 | 4.5510E-01 | -1.0201E 00 | 1.1170E 00 | -1.1512E 00 |
| 7.0000E 00 | -6.0874E-01 | -9.5015E-01 | 1.1284E 00 | 1.0010E 00 |
| 8.0000E 00 | -1.1390E 00 | -1.2537E-02 | 1.1391E 00 | 1.1006E-02 |
| 9.0000E 00 | -6.4057E-01 | 9.5394E-01 | 1 1491E 00 | -9.7946E-01 |
| 1.0000E 01 | 4.5065E-01 | 1.0673E 00 | 1 1585E 00 | 1.1713E 00 |
| 1.3000E 01 | -2.7285E-01 | -1.1528E 00 | 1.1846E 00 | 1.3384E 00 |
| 1.5000E 01 | -9.5870E-01 | 7.2255E-01 | 1.2005E 00 | -6.4585E-01 |
| 1.8000E 01 | 1.0833E 00 | -5.6677E-01 | 1.2226E 00 | -4.8202E-01 |
| 2.0000E 01 | -9.6639E-01 | -7.7135E-01 | 1.2365E 00 | 6.7363E-01 |
| 2.3000E 01 | 8.4277E-01 | 9.3153E-01 | 1.2562E 00 | 8.3538E-01 |
| 2.5000E 01 | 5.1627E-01 | -1.1589E 00 | 1.2687E 00 | -1.1517E 00 |
| 2.8000E 01 | -7.0447E-01 | 1.0768E 00 | 1.2867E 00 | -9.9144E-01 |
| 3.0000E 01 | 1.2813E 00 | 2.0968E-01 | 1.2983E 00 | 1.6221E-01 |
| 3.3000E 01 | -1.2477E 00 | -4.1540E-01 | 1.3151E 00 | 3.2138E-01 |
| 3.5000E 01 | 1.2763E-01 | 1.3197E 00 | 1.3259E 00 | 1.4744E 00 |
| 4.0000E 01 | -1.2669E 00 | 4.7171E-01 | 1.3519E 00 | -3.5643E-01 |
| 4.5000E 01 | -7.9711E-01 | -1.1223E 00 | 1.3766E 00 | 9.5321E-01 |
| 5.0000E 01 | 8.9243E-01 | -1.0788E 00 | 1.4001E 00 | -8.7968E-01 |

## CASE III

$\phi = 180^{\circ}$ $\psi = 180^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 9.9995E-01 | -9.9998E-03 | 10.0000E-01 | -10.0000E-03 |
| 2.0000E-02 | 9.9980E-01 | -1.9999E-02 | 10.0000E-01 | -2.0000E-02 |
| 4.0000E-02 | 9.9920E-01 | -3.9989E-02 | 10.0000E-01 | -4.0000E-02 |
| 6.0000E-02 | 9.9820E-01 | -5.9964E-02 | 10.0000E-01 | -6.0000E-02 |
| 1.0000E-01 | 9.9500E-01 | -9.9833E-02 | 10.0000E-01 | -1.0000E-01 |
| 2.0000E-01 | 9.8007E-01 | -1.9867E-01 | 10.0000E-01 | -2.0000E-01 |
| 3.0000E-01 | 9.5534E-01 | -2.9552E-01 | 10.0000E-01 | -3.0000E-01 |
| 4.0000E-01 | 9.2106E-01 | -3.8942E-01 | 10.0000E-01 | -4.0000E-01 |
| 5.0000E-01 | 8.7758E-01 | -4.7943E-01 | 10.0000E-01 | -5.0000E-01 |
| 6.0000E-01 | 8.2534E-01 | -5.6464E-01 | 10.0000E-01 | -6.0000E-01 |
| 7.0000E-01 | 7.6485E-01 | -6.4422E-01 | 1.0000E 00 | -7.0000E-01 |
| 8.0000E-01 | 6.9672E-01 | -7.1736E-01 | 1.0000E 00 | -7.9999E-01 |
| 9.0000E-01 | 6.2163E-01 | -7.8333E-01 | 1.0000E 00 | -8.9998E-01 |
| 1.0000E 00 | 5.4030E-01 | -8.4147E-01 | 10.0000E-01 | -1.0000E 00 |
| 1.4000E 00 | 1.6996E-01 | -9.8545E-01 | 10.0000E-01 | -1.4000E 00 |
| 2.0000E 00 | -4.1619E-01 | -9.0929E-01 | 1.0000E 00 | 1.1415E 00 |
| 2.4000E 00 | -7.3739E-01 | -6.7546E-01 | 10.0000E-01 | 7.4159E-01 |
| 3.0000E 00 | -9.8999E-01 | -1.4112E-01 | 10.0000E-01 | 1.4159E-01 |
| 3.4000E 00 | -9.6680E-01 | 2.5554E-01 | 10.0000E-01 | -2.5841E-01 |
| 4.0000E 00 | -6.5365E-01 | 7.5680E-01 | 1.0000E 00 | -8.5840E-01 |
| 4.4000E 00 | -3.0736E-01 | 9.5161E-01 | 1.0000E 00 | -1.2584E 00 |
| 5.0000E 00 | 2.8367E-01 | 9.5892E-01 | 10.0000E-01 | 1.2832E 00 |
| 6.0000E 00 | 9.6016E-01 | 2.7941E-01 | 9.9999E-01 | 2.8318E-01 |
| 7.0000E 00 | 7.5387E-01 | -6.5698E-01 | 9.9997E-01 | -7.1683E-01 |
| 8.0000E 00 | -1.4550E-01 | -9.8935E-01 | 9.9999E-01 | 1.4248E 00 |
| 9.0000E 00 | -9.1113E-01 | -4.1211E-01 | 10.0000E-01 | 4.2477E-01 |
| 1.0000E 01 | -8.3908E-01 | 5.4403E-01 | 1.0000E 00 | -5.7522E-01 |
| 1.3000E 01 | 9.0742E-01 | -4.2017E-01 | 9.9998E-01 | -4.3364E-01 |
| 1.5000E 01 | -7.5966E-01 | -6.5029E-01 | 9.9998E-01 | 7.0798E-01 |
| 1.8000E 01 | 6.6034E-01 | 7.5097E-01 | 10.0000E-01 | 8.4953E-01 |
| 2.0000E 01 | 4.0804E-01 | -9.1293E-01 | 9.9997E-01 | -1.1505E 00 |
| 2.3000E 01 | -5.3284E-01 | 8.4622E-01 | 1.0000E 00 | -1.0088E 00 |
| 2.5000E 01 | 9.9119E-01 | 1.3234E-01 | 9.9999E-01 | 1.3273E-01 |
| 2.8000E 01 | -9.6259E-01 | -2.7090E-01 | 9.9998E-01 | 2.7433E-01 |
| 3.0000E 01 | 1.5424E-01 | 9.8803E-01 | 9.9999E-01 | 1.4159E 00 |
| 3.3000E 01 | -1.3225E-02 | -9.9993E-01 | 1.0000E 00 | 1.5576E 00 |
| 3.5000E 01 | -9.0366E-01 | 4.2818E-01 | 9.9997E-01 | -4.4249E-01 |
| 4.0000E 01 | -6.6689E-01 | -7.4512E-01 | 9.9997E-01 | 8.4075E-01 |
| 4.5000E 01 | 5.2527E-01 | -8.5088E-01 | 9.9996E-01 | -1.0177E 00 |
| 5.0000E 01 | 9.6495E-01 | 2.6236E-01 | 9.9998E-01 | 2.6547E-01 |

CASE III

$\phi = 180^{\circ}$ $\psi = 180^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | -1.0003E-02 | -9.9995E-01 | 10.0000E-01 | 1.5608E 00 |
| 2.0000E-02 | -2.0002E-02 | -9.9980E-01 | 10.0000E-01 | 1.5508E 00 |
| 4.0000E-02 | -3.9993E-02 | -9.9920E-01 | 10.0000E-01 | 1.5308E 00 |
| 6.0000E-02 | -5.9967E-02 | -9.9820E-01 | 10.0000E-01 | 1.5108E 00 |
| 1.0000E-01 | -9.9837E-02 | -9.9500E-01 | 10.0000E-01 | 1.4708E 00 |
| 2.0000E-01 | -1.9867E-01 | -9.8007E-01 | 10.0000E-01 | 1.3708E 00 |
| 3.0000E-01 | -2.9552E-01 | -9.5534E-01 | 10.0000E-01 | 1.2708E 00 |
| 4.0000E-01 | -3.8942E-01 | -9.2106E-01 | 10.0000E-01 | 1.1708E 00 |
| 5.0000E-01 | -4.7942E-01 | -8.7758E-01 | 10.0000E-01 | 1.0708E 00 |
| 6.0000E-01 | -5.6463E-01 | -8.2533E-01 | 9.9999E-01 | 9.7081E-01 |
| 7.0000E-01 | -6.4418E-01 | -7.6484E-01 | 9.9997E-01 | 8.7083E-01 |
| 8.0000E-01 | -7.1728E-01 | -6.9671E-01 | 9.9994E-01 | 7.7085E-01 |
| 9.0000E-01 | -7.8318E-01 | -6.2162E-01 | 9.9989E-01 | 6.7089E-01 |
| 1.0000E 00 | -8.4147E-01 | -5.4030E-01 | 1.0000E 00 | 5.7079E-01 |
| 1.4000E 00 | -9.8546E-01 | -1.6996E-01 | 1.0000E 00 | 1.7079E-01 |
| 2.0000E 00 | -9.0946E-01 | 4.1617E-01 | 1.0002E 00 | -4.2916E-01 |
| 2.4000E 00 | -6.7545E-01 | 7.3739E-01 | 9.9999E-01 | -8.2921E-01 |
| 3.0000E 00 | -1.4112E-01 | 9.8999E-01 | 10.0000E-01 | -1.4292E 00 |
| 3.4000E 00 | 2.5554E-01 | 9.6679E-01 | 10.0000E-01 | 1.3124E 00 |
| 4.0000E 00 | 7.5677E-01 | 6.5364E-01 | 9.9997E-01 | 7.1241E-01 |
| 4.4000E 00 | 9.5151E-01 | 3.0735E-01 | 9.9992E-01 | 3.1243E-01 |
| 5.0000E 00 | 9.5893E-01 | -2.8367E-01 | 1.0000E 00 | -2.8761E-01 |
| 6.0000E 00 | 2.7940E-01 | -9.6017E-01 | 9.9999E-01 | -1.2876E 00 |
| 7.0000E 00 | -6.5703E-01 | -7.5388E-01 | 1.0000E 00 | 8.5393E-01 |
| 8.0000E 00 | -9.8933E-01 | 1.4550E-01 | 9.9998E-01 | -1.4602E-01 |
| 9.0000E 00 | -4.1212E-01 | 9.1113E-01 | 10.0000E-01 | -1.1460E 00 |
| 1.0000E 01 | 5.4399E-01 | 8.3907E-01 | 9.9998E-01 | 9.9560E-01 |
| 1.3000E 01 | -4.2020E-01 | -9.0743E-01 | 10.0000E-01 | 1.1371E 00 |
| 1.5000E 01 | -6.5024E-01 | 7.5967E-01 | 9.9996E-01 | -8.6286E-01 |
| 1.8000E 01 | 7.5100E-01 | -6.6033E-01 | 1.0000E 00 | -7.2124E-01 |
| 2.0000E 01 | -9.1298E-01 | -4.0806E-01 | 1.0000E 00 | 4.2032E-01 |
| 2.3000E 01 | 8.4620E-01 | 5.3283E-01 | 9.9998E-01 | 5.6195E-01 |
| 2.5000E 01 | 1.3234E-01 | -9.9119E-01 | 9.9999E-01 | -1.4381E 00 |
| 2.8000E 01 | -2.7088E-01 | 9.6259E-01 | 9.9998E-01 | -1.2965E 00 |
| 3.0000E 01 | 9.8800E-01 | -1.5425E-01 | 9.9997E-01 | -1.5488E-01 |
| 3.3000E 01 | -9.9984E-01 | 1.3261E-02 | 9.9993E-01 | -1.3263E-02 |
| 3.5000E 01 | 4.2820E-01 | 9.0367E-01 | 9.9999E-01 | 1.1283E 00 |
| 4.0000E 01 | -7.4505E-01 | 6.6692E-01 | 9.9994E-01 | -7.3012E-01 |
| 4.5000E 01 | -8.5093E-01 | -5.2529E-01 | 1.0000E 00 | 5.5305E-01 |
| 5.0000E 01 | 2.6235E-01 | -9.6495E-01 | 9.9998E-01 | -1.3053E 00 |

CASE III

$\phi = 185^{\circ}$ $\psi = 185^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 9.7243E-01 | -1.1341E-02 | 9.7250E-01 | -1.1662E-02 |
| 2.0000E-02 | 9.7180E-01 | -2.2254E-02 | 9.7205E-01 | -2.2896E-02 |
| 4.0000E-02 | 9.7022E-01 | -4.3651E-02 | 9.7121E-01 | -4.4960E-02 |
| 6.0000E-02 | 9.6824E-01 | -6.4709E-02 | 9.7040E-01 | -6.6732E-02 |
| 1.0000E-01 | 9.6304E-01 | -1.0615E-01 | 9.6887E-01 | -1.0978E-01 |
| 2.0000E-01 | 9.4300E-01 | -2.0677E-01 | 9.6540E-01 | -2.1585E-01 |
| 3.0000E-01 | 9.1321E-01 | -3.0337E-01 | 9.6228E-01 | -3.2074E-01 |
| 4.0000E-01 | 8.7409E-01 | -3.9552E-01 | 9.5941E-01 | -4.2493E-01 |
| 5.0000E-01 | 8.2614E-01 | -4.8254E-01 | 9.5674E-01 | -5.2864E-01 |
| 6.0000E-01 | 7.6992E-01 | -5.6372E-01 | 9.5424E-01 | -6.3200E-01 |
| 7.0000E-01 | 7.0607E-01 | -6.3837E-01 | 9.5187E-01 | -7.3509E-01 |
| 8.0000E-01 | 6.3528E-01 | -7.0582E-01 | 9.4961E-01 | -8.3795E-01 |
| 9.0000E-01 | 5.5831E-01 | -7.6548E-01 | 9.4746E-01 | -9.4064E-01 |
| 1.0000E 00 | 4.7600E-01 | -8.1682E-01 | 9.4539E-01 | -1.0432E 00 |
| 1.4000E 00 | 1.1105E-01 | -9.3126E-01 | 9.3786E-01 | -1.4521E 00 |
| 2.0000E 00 | -4.3874E-01 | -8.1787E-01 | 9.2812E-01 | 1.0784E 00 |
| 2.4000E 00 | -7.2179E-01 | -5.7426E-01 | 9.2236E-01 | 6.7206E-01 |
| 3.0000E 00 | -9.1268E-01 | -5.8085E-02 | 9.1453E-01 | 6.3557E-02 |
| 3.4000E 00 | -8.5717E-01 | 3.0474E-01 | 9.0973E-01 | -3.4158E-01 |
| 4.0000E 00 | -5.2626E-01 | 7.3385E-01 | 9.0304E-01 | -9.4867E-01 |
| 4.4000E 00 | -1.9418E-01 | 8.7764E-01 | 8.9887E-01 | -1.3531E 00 |
| 5.0000E 00 | 3.3819E-01 | 8.2644E-01 | 8.9296E-01 | 1.1824E 00 |
| 6.0000E 00 | 8.7071E-01 | 1.5214E-01 | 8.8390E-01 | 1.7298E-01 |
| 7.0000E 00 | 5.8736E-01 | -6.4940E-01 | 8.7562E-01 | -8.3552E-01 |
| 8.0000E 00 | -2.3364E-01 | -8.3594E-01 | 8.6797E-01 | 1.2983E 00 |
| 9.0000E 00 | -8.2465E-01 | -2.4699E-01 | 8.6084E-01 | 2.9101E-01 |
| 1.0000E 01 | -6.4453E-01 | 5.6049E-01 | 8.5415E-01 | -7.1577E-01 |
| 1.3000E 01 | 6.9368E-01 | -4.6679E-01 | 8.3611E-01 | -5.9232E-01 |
| 1.5000E 01 | -7.0858E-01 | -4.2337E-01 | 8.2542E-01 | 5.3857E-01 |
| 1.8000E 01 | 6.3776E-01 | 5.0079E-01 | 8.1088E-01 | 6.6568E-01 |
| 2.0000E 01 | 1.8100E-01 | -7.8130E-01 | 8.0199E-01 | -1.3431E 00 |
| 2.3000E 01 | -2.7596E-01 | 7.3985E-01 | 7.8964E-01 | -1.2138E 00 |
| 2.5000E 01 | 7.7947E-01 | -6.2314E-02 | 7.8196E-01 | -7.9775E-02 |
| 2.8000E 01 | -7.7013E-01 | -3.9433E-02 | 7.7114E-01 | 5.1158E-02 |
| 3.0000E 01 | 2.8686E-01 | 7.0846E-01 | 7.6433E-01 | 1.1861E 00 |
| 3.3000E 01 | -1.8863E-01 | -7.3071E-01 | 7.5467E-01 | 1.3182E 00 |
| 3.5000E 01 | -5.7833E-01 | 4.7522E-01 | 7.4854E-01 | -6.8784E-01 |
| 4.0000E 01 | -6.1359E-01 | -4.0315E-01 | 7.3418E-01 | 5.8131E-01 |
| 4.5000E 01 | 1.9983E-01 | -6.9276E-01 | 7.2100E-01 | -1.2900E 00 |
| 5.0000E 01 | 7.0868E-01 | -1.3215E-02 | 7.0880E-01 | -1.8645E-02 |

CASE III

$\phi = 185^{\circ}$ $\psi = 185^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | -5.8347E-02 | -1.1031E 00 | 1.1046E 00 | 1.5180E 00 |
| 2.0000E-02 | -6.8440E-02 | -1.0819E 00 | 1.0841E 00 | 1.5076E 00 |
| 4.0000E-02 | -8.9032E-02 | -1.0601E 00 | 1.0638E 00 | 1.4870E 00 |
| 6.0000E-02 | -1.0961E-01 | -1.0464E 00 | 1.0521E 00 | 1.4664E 00 |
| 1.0000E-01 | -1.5039E-01 | -1.0265E 00 | 1.0375E 00 | 1.4253E 00 |
| 2.0000E-01 | -2.4981E-01 | -9.8649E-01 | 1.0176E 00 | 1.3228E 00 |
| 3.0000E-01 | -3.4528E-01 | -9.4479E-01 | 1.0059E 00 | 1.2204E 00 |
| 4.0000E-01 | -4.3619E-01 | -8.9702E-01 | 9.9745E-01 | 1.1182E 00 |
| 5.0000E-01 | -5.2183E-01 | -8.4221E-01 | 9.9077E-01 | 1.0161E 00 |
| 6.0000E-01 | -6.0149E-01 | -7.8028E-01 | 9.8520E-01 | 9.1408E-01 |
| 7.0000E-01 | -6.7446E-01 | -7.1154E-01 | 9.8040E-01 | 8.1214E-01 |
| 8.0000E-01 | -7.4010E-01 | -6.3650E-01 | 9.7615E-01 | 7.1028E-01 |
| 9.0000E-01 | -7.9781E-01 | -5.5581E-01 | 9.7233E-01 | 6.0849E-01 |
| 1.0000E 00 | -8.4709E-01 | -4.7022E-01 | 9.6885E-01 | 5.0675E-01 |
| 1.4000E 00 | -9.5240E-01 | -9.5827E-02 | 9.5721E-01 | 1.0028E-01 |
| 2.0000E 00 | -8.2447E-01 | 4.5934E-01 | 9.4380E-01 | -5.0831E-01 |
| 2.4000E 00 | -5.7214E-01 | 7.4129E-01 | 9.3641E-01 | -9.1348E-01 |
| 3.0000E 00 | -4.6505E-02 | 9.2562E-01 | 9.2679E-01 | -1.5206E 00 |
| 3.4000E 00 | 3.1947E-01 | 8.6390E-01 | 9.2108E-01 | 1.2166E 00 |
| 4.0000E 00 | 7.4836E-01 | 5.2350E-01 | 9.1329E-01 | 6.1041E-01 |
| 4.4000E 00 | 8.8921E-01 | 1.8630E-01 | 9.0852E-01 | 2.0653E-01 |
| 5.0000E 00 | 8.3102E-01 | -3.5036E-01 | 9.0186E-01 | -3.9899E-01 |
| 6.0000E 00 | 1.4498E-01 | -8.7995E-01 | 8.9181E-01 | -1.4075E 00 |
| 7.0000E 00 | -6.6001E-01 | -5.8625E-01 | 8.8278E-01 | 7.2628E-01 |
| 8.0000E 00 | -8.4023E-01 | 2.4249E-01 | 8.7452E-01 | -2.8097E-01 |
| 9.0000E 00 | -2.4211E-01 | 8.3240E-01 | 8.6689E-01 | -1.2877E 00 |
| 1.0000E 01 | 5.6907E-01 | 6.4450E-01 | 8.5978E-01 | 8.4747E-01 |
| 1.3000E 01 | -4.7404E-01 | -6.9444E-01 | 8.4081E-01 | 9.7183E-01 |
| 1.5000E 01 | -4.2113E-01 | 7.1483E-01 | 8.2966E-01 | -1.0384E 00 |
| 1.8000E 01 | 4.9946E-01 | -6.4350E-01 | 8.1459E-01 | -9.1076E-01 |
| 2.0000E 01 | -7.8560E-01 | -1.7758E-01 | 8.0542E-01 | 2.2230E-01 |
| 2.3000E 01 | 7.4411E-01 | 2.7334E-01 | 7.9272E-01 | 3.5204E-01 |
| 2.5000E 01 | -6.6274E-02 | -7.8205E-01 | 7.8485E-01 | 1.4863E 00 |
| 2.8000E 01 | -3.6094E-02 | 7.7294E-01 | 7.7378E-01 | -1.5241E 00 |
| 3.0000E 01 | 7.0953E-01 | -2.9089E-01 | 7.6684E-01 | -3.8907E-01 |
| 3.3000E 01 | -7.3217E-01 | 1.9223E-01 | 7.5698E-01 | -2.5676E-01 |
| 3.5000E 01 | 4.7894E-01 | 5.7813E-01 | 7.5075E-01 | 8.7895E-01 |
| 4.0000E 01 | -4.0194E-01 | 6.1675E-01 | 7.3616E-01 | -9.9322E-01 |
| 4.5000E 01 | -6.9517E-01 | -1.9789E-01 | 7.2279E-01 | 2.7733E-01 |
| 5.0000E 01 | -1.5597E-02 | -7.1026E-01 | 7.1043E-01 | 1.5488E 00 |

CASE III

$\phi = 190^{\circ}$ $\psi = 190^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 9.4624E-01 | -1.2739E-02 | 9.4633E-01 | -1.3462E-02 |
| 2.0000E-02 | 9.4507E-01 | -2.4551E-02 | 9.4539E-01 | -2.5972E-02 |
| 4.0000E-02 | 9.4244E-01 | -4.7282E-02 | 9.4363E-01 | -5.0127E-02 |
| 6.0000E-02 | 9.3942E-01 | -6.9327E-02 | 9.4197E-01 | -7.3664E-02 |
| 1.0000E-01 | 9.3216E-01 | -1.1212E-01 | 9.3888E-01 | -1.1970E-01 |
| 2.0000E-01 | 9.0707E-01 | -2.1393E-01 | 9.3196E-01 | -2.3162E-01 |
| 3.0000E-01 | 8.7247E-01 | -3.0973E-01 | 9.2582E-01 | -3.4112E-01 |
| 4.0000E-01 | 8.2893E-01 | -3.9962E-01 | 9.2023E-01 | -4.4922E-01 |
| 5.0000E-01 | 7.7705E-01 | -4.8324E-01 | 9.1506E-01 | -5.5636E-01 |
| 6.0000E-01 | 7.1751E-01 | -5.6009E-01 | 9.1023E-01 | -6.6280E-01 |
| 7.0000E-01 | 6.5102E-01 | -6.2962E-01 | 9.0568E-01 | -7.6869E-01 |
| 8.0000E-01 | 5.7837E-01 | -6.9134E-01 | 9.0137E-01 | -8.7414E-01 |
| 9.0000E-01 | 5.0038E-01 | -7.4479E-01 | 8.9727E-01 | -9.7923E-01 |
| 1.0000E 00 | 4.1790E-01 | -7.8958E-01 | 8.9335E-01 | -1.0840E 00 |
| 1.4000E 00 | 6.1489E-02 | -8.7700E-01 | 8.7916E-01 | -1.5008E 00 |
| 2.0000E 00 | -4.5045E-01 | -7.3381E-01 | 8.6103E-01 | 1.0203E 00 |
| 2.4000E 00 | -6.9775E-01 | -4.8619E-01 | 8.5044E-01 | 6.0857E-01 |
| 3.0000E 00 | -8.3613E-01 | 5.7550E-03 | 8.3615E-01 | -6.8827E-03 |
| 3.4000E 00 | -7.5686E-01 | 3.3449E-01 | 8.2748E-01 | -4.1614E-01 |
| 4.0000E 00 | -4.2065E-01 | 6.9861E-01 | 8.1547E-01 | -1.0288E 00 |
| 4.4000E 00 | -1.0811E-01 | 8.0077E-01 | 8.0804E-01 | -1.4366E 00 |
| 5.0000E 00 | 3.6594E-01 | 7.0868E-01 | 7.9759E-01 | 1.0941E 00 |
| 6.0000E 00 | 7.7936E-01 | 6.0753E-02 | 7.8173E-01 | 7.7795E-02 |
| 7.0000E 00 | 4.5458E-01 | -6.1829E-01 | 7.6741E-01 | -9.3682E-01 |
| 8.0000E 00 | -2.7930E-01 | -7.0073E-01 | 7.5434E-01 | 1.1915E 00 |
| 9.0000E 00 | -7.3037E-01 | -1.3241E-01 | 7.4228E-01 | 1.7934E-01 |
| 1.0000E 01 | -4.9235E-01 | 5.4042E-01 | 7.3107E-01 | -8.3191E-01 |
| 1.3000E 01 | 5.2741E-01 | -4.6244E-01 | 7.0144E-01 | -7.1985E-01 |
| 1.5000E 01 | -6.2897E-01 | -2.6945E-01 | 6.8425E-01 | 4.0474E-01 |
| 1.8000E 01 | 5.7267E-01 | 3.3079E-01 | 6.6134E-01 | 5.2381E-01 |
| 2.0000E 01 | 5.2507E-02 | -6.4547E-01 | 6.4760E-01 | -1.4896E 00 |
| 2.3000E 01 | -1.2770E-01 | 6.1574E-01 | 6.2884E-01 | -1.3663E 00 |
| 2.5000E 01 | 6.0028E-01 | -1.4425E-01 | 6.1737E-01 | -2.3584E-01 |
| 2.8000E 01 | -5.9785E-01 | 6.5792E-02 | 6.0146E-01 | -1.0961E-01 |
| 3.0000E 01 | 3.0836E-01 | 5.0489E-01 | 5.9161E-01 | 1.0225E 00 |
| 3.3000E 01 | -2.3557E-01 | -5.2761E-01 | 5.7781E-01 | 1.1509E 00 |
| 3.5000E 01 | -3.7250E-01 | 4.3038E-01 | 5.6919E-01 | -8.5737E-01 |
| 4.0000E 01 | -5.0450E-01 | -2.1744E-01 | 5.4936E-01 | 4.0695E-01 |
| 4.5000E 01 | 5.4426E-02 | -5.2882E-01 | 5.3161E-01 | -1.4682E 00 |
| 5.0000E 01 | 5.0527E-01 | -1.0249E-01 | 5.1556E-01 | -2.0013E-01 |

CASE III

$\phi = 190^{\circ}$ $\psi = 190^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | -1.1330E-01 | -1.2061E 00 | 1.2114E 00 | 1.4771E 00 |
| 2.0000E-02 | -1.2172E-01 | -1.1614E 00 | 1.1678E 00 | 1.4664E 00 |
| 4.0000E-02 | -1.4119E-01 | -1.1166E 00 | 1.1255E 00 | 1.4450E 00 |
| 6.0000E-02 | -1.6133E-01 | -1.0895E 00 | 1.1014E 00 | 1.4238E 00 |
| 1.0000E-01 | -2.0162E-01 | -1.0523E 00 | 1.0714E 00 | 1.3815E 00 |
| 2.0000E-01 | -2.9935E-01 | -9.8703E-01 | 1.0314E 00 | 1.2764E 00 |
| 3.0000E-01 | -3.9167E-01 | -9.2884E-01 | 1.0080E 00 | 1 1717E 00 |
| 4.0000E-01 | -4.7817E-01 | -8.6836E-01 | 9.9132E-01 | 1.0674E 00 |
| 5.0000E-01 | -5.5827E-01 | -8.0322E-01 | 9.7818E-01 | 9.6341E-01 |
| 6.0000E-01 | -6.3140E-01 | -7.3278E-01 | 9.6729E-01 | 8.5958E-01 |
| 7.0000E-01 | -6.9703E-01 | -6.5710E-01 | 9.5793E-01 | 7.5592E-01 |
| 8.0000E-01 | -7.5464E-01 | -5.7657E-01 | 9.4969E-01 | 6.5242E-01 |
| 9.0000E-01 | -8.0381E-01 | -4.9178E-01 | 9.4231E-01 | 5.4906E-01 |
| 1.0000E 00 | -8.4416E-01 | -4.0342E-01 | 9.3560E-01 | 4.4581E-01 |
| 1.4000E 00 | -9.1283E-01 | -3.0908E-02 | 9.1336E-01 | 3.3847E-02 |
| 2.0000E 00 | -7.4195E-01 | 4.8805E-01 | 8.8808E-01 | -5.8183E-01 |
| 2.4000E 00 | -4.7888E-01 | 7.3151E-01 | 8.7432E-01 | -9.9116E-01 |
| 3.0000E 00 | 2.8352E-02 | 8.5611E-01 | 8.5658E-01 | 1.5377E 00 |
| 3.4000E 00 | 3.6111E-01 | 7.6523E-01 | 8.4615E-01 | 1.1299E 00 |
| 4.0000E 00 | 7.2249E-01 | 4.1272E-01 | 8.3206E-01 | 5.1901E-01 |
| 4.4000E 00 | 8.1831E-01 | 9.2228E-02 | 8.2349E-01 | 1.1223E-01 |
| 5.0000E 00 | 7.1330E-01 | -3.8721E-01 | 8.1162E-01 | -4.9733E-01 |
| 6.0000E 00 | 4.6710E-02 | -7.9254E-01 | 7.9391E-01 | -1.5119E 00 |
| 7.0000E 00 | -6.3496E-01 | -4.4990E-01 | 7.7819E-01 | 6.1643E-01 |
| 8.0000E 00 | -7.0497E-01 | 2.9449E-01 | 7.6401E-01 | -3.9570E-01 |
| 9.0000E 00 | -1.2253E-01 | 7.4098E-01 | 7.5104E-01 | -1.4069E 00 |
| 1.0000E 01 | 5.5357E-01 | 4.8969E-01 | 7.3908E-01 | 7.2424E-01 |
| 1.3000E 01 | -4.7339E-01 | -5.2618E-01 | 7.0779E-01 | 8.3816E-01 |
| 1.5000E 01 | -2.6411E-01 | 6.3725E-01 | 6.8982E-01 | -1.1779E 00 |
| 1.8000E 01 | 3.2692E-01 | -5.8026E-01 | 6.6601E-01 | -1.0577E 00 |
| 2.0000E 01 | -6.5017E-01 | -4.6263E-02 | 6.5181E-01 | 7.1035E-02 |
| 2.3000E 01 | 6.2048E-01 | 1.2263E-01 | 6.3249E-01 | 1.9512E-01 |
| 2.5000E 01 | -1.5042E-01 | -6.0220E-01 | 6.2071E-01 | 1.3260E 00 |
| 2.8000E 01 | 7.1149E-02 | 6.0022E-01 | 6.0442E-01 | 1.4528E 00 |
| 3.0000E 01 | 5.0472E-01 | -3.1387E-01 | 5.9435E-01 | -5.5634E-01 |
| 3.3000E 01 | -5.2804E-01 | 2.4060E-01 | 5.8027E-01 | -4.2754E-01 |
| 3.5000E 01 | 4.3486E-01 | 3.7081E-01 | 5.7149E-01 | 7.0607E-01 |
| 4.0000E 01 | -2.1478E-01 | 5.0777E-01 | 5.5133E-01 | -1.1706E 00 |
| 4.5000E 01 | -5.3084E-01 | -5.1247E-02 | 5.3331E-01 | 9.6241E-02 |
| 5.0000E 01 | -1.0578E-01 | -5.0611E-01 | 5.1705E-01 | 1.3648E 00 |

CASE III

$\phi = 200^{\circ}$ $\psi = 200^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 8.9742E-01 | -1.5675E-02 | 8.9755E-01 | -1.7466E-02 |
| 2.0000E-02 | 8.9501E-01 | -2.9211E-02 | 8.9549E-01 | -3.2625E-02 |
| 4.0000E-02 | 8.9009E-01 | -5.4359E-02 | 8.9175E-01 | -6.0995E-02 |
| 6.0000E-02 | 8.8489E-01 | -7.8078E-02 | 8.8832E-01 | -8.8007E-02 |
| 1.0000E-01 | 8.7344E-01 | -1.2292E-01 | 8.8205E-01 | -1.3981E-01 |
| 2.0000E-01 | 8.3865E-01 | -2.2551E-01 | 8.6844E-01 | -2.6268E-01 |
| 3.0000E-01 | 7.9536E-01 | -3.1823E-01 | 8.5667E-01 | -3.8060E-01 |
| 4.0000E-01 | 7.4428E-01 | -4.0245E-01 | 8.4613E-01 | -4.9569E-01 |
| 5.0000E-01 | 6.8618E-01 | -4.7843E-01 | 8.3650E-01 | -6.0888E-01 |
| 6.0000E-01 | 6.2184E-01 | -5.4612E-01 | 8.2761E-01 | -7.2066E-01 |
| 7.0000E-01 | 5.5211E-01 | -6.0535E-01 | 8.1931E-01 | -8.3136E-01 |
| 8.0000E-01 | 4.7784E-01 | -6.5592E-01 | 8.1152E-01 | -9.4119E-01 |
| 9.0000E-01 | 3.9991E-01 | -6.9767E-01 | 8.0416E-01 | -1.0503E 00 |
| 1.0000E 00 | 3.1921E-01 | -7.3048E-01 | 7.9717E-01 | -1.1588E 00 |
| 1.4000E 00 | -1.3528E-02 | -7.7212E-01 | 7.7224E-01 | 1.5533E 00 |
| 2.0000E 00 | -4.5018E-01 | -5.8887E-01 | 7.4124E-01 | 9.1808E-01 |
| 2.4000E 00 | -6.3546E-01 | -3.4593E-01 | 7.2351E-01 | 4.9852E-01 |
| 3.0000E 00 | -6.9446E-01 | 8.8566E-02 | 7.0008E-01 | -1.2685E-01 |
| 3.4000E 00 | -5.8787E-01 | 3.5379E-01 | 6.8611E-01 | -5.4175E-01 |
| 4.0000E 00 | -2.6530E-01 | 6.1208E-01 | 6.6711E-01 | -1.1618E 00 |
| 4.4000E 00 | 2.0389E-03 | 6.5551E-01 | 6.5552E-01 | 1.5677E 00 |
| 5.0000E 00 | 3.7142E-01 | 5.2055E-01 | 6.3947E-01 | 9.5106E-01 |
| 6.0000E 00 | 6.1399E-01 | -4.5126E-02 | 6.1565E-01 | -7.3365E-02 |
| 7.0000E 00 | 2.7261E-01 | -5.2854E-01 | 5.9470E-01 | -1.0946E 00 |
| 8.0000E 00 | -2.9741E-01 | -4.9370E-01 | 5.7602E-01 | 1.0282E 00 |
| 9.0000E 00 | -5.5913E-01 | -6.4081E-03 | 5.5917E-01 | 1.1460E-02 |
| 1.0000E 01 | -2.9215E-01 | 4.5871E-01 | 5.4384E-01 | -1.0037E 00 |
| 1.3000E 01 | 3 1373E-01 | -3.9549E-01 | 5.0481E-01 | -9.0017E-01 |
| 1.5000E 01 | -4.7146E-01 | -1.0574E-01 | 4.8317E-01 | 2.2063E-01 |
| 1.8000E 01 | 4.2997E-01 | 1.5014E-01 | 4.5543E-01 | 3.3594E-01 |
| 2.0000E 01 | -4.7476E-02 | -4.3682E-01 | 4.3940E-01 | 1.4625E 00 |
| 2.3000E 01 | -5.7601E-03 | 4.1817E-01 | 4.1821E-01 | -1.5570E 00 |
| 2.5000E 01 | 3.6925E-01 | -1.6795E-01 | 4.0565E-01 | -4.2687E-01 |
| 2.8000E 01 | -3.7131E-01 | 1.1507E-01 | 3.8873E-01 | -3.0052E-01 |
| 3.0000E 01 | 2.5490E-01 | 2.7984E-01 | 3.7853E-01 | 8.3201E-01 |
| 3.3000E 01 | -2.0870E-01 | -2.9895E-01 | 3.6459E-01 | 9.6135E-01 |
| 3.5000E 01 | -1.7841E-01 | 3.0818E-01 | 3.5609E-01 | -1.0460E 00 |
| 4.0000E 01 | -3.2893E-01 | -7.3880E-02 | 3.3712E-01 | 2.2094E-01 |
| 4.5000E 01 | -2.5730E-02 | -3.1978E-01 | 3.2081E-01 | 1.4905E 00 |
| 5.0000E 01 | 2.8478E-01 | -1.1358E-01 | 3.0659E-01 | -3.7951E-01 |

CASE III

$\phi = 200^{\circ}$ $\psi = 200^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | -2.4152E-01 | -1.4086E 00 | 1.4291E 00 | 1.4010E 00 |
| 2.0000E-02 | -2.4075E-01 | -1.3104E 00 | 1.3324E 00 | 1.3891E 00 |
| 4.0000E-02 | -2.5252E-01 | -1.2155E 00 | 1.2415E 00 | 1.3660E 00 |
| 6.0000E-02 | -2.6864E-01 | -1.1600E 00 | 1.1907E 00 | 1.3432E 00 |
| 1.0000E-01 | -3.0376E-01 | -1.0874E 00 | 1.1290E 00 | 1.2984E 00 |
| 2.0000E-01 | -3.9144E-01 | -9.7260E-01 | 1.0484E 00 | 1.1882E 00 |
| 3.0000E-01 | -4.7305E-01 | -8.8379E-01 | 1.0024E 00 | 1.0793E 00 |
| 4.0000E-01 | -5.4725E-01 | -8.0093E-01 | 9.7004E-01 | 9.7139E-01 |
| 5.0000E-01 | -6.1358E-01 | -7.1858E-01 | 9.4490E-01 | 8.6405E-01 |
| 6.0000E-01 | -6.7174E-01 | -6.3488E-01 | 9.2429E-01 | 7.5720E-01 |
| 7.0000E-01 | -7.2144E-01 | -5.4929E-01 | 9.0675E-01 | 6.5074E-01 |
| 8.0000E-01 | -7.6247E-01 | -4.6185E-01 | 8.9144E-01 | 5.4462E-01 |
| 9.0000E-01 | -7.9467E-01 | -3.7294E-01 | 8.7783E-01 | 4.3879E-01 |
| 1.0000E 00 | -8.1794E-01 | -2.8311E-01 | 8.6555E-01 | 3.3322E-01 |
| 1.4000E 00 | -8.2239E-01 | 7.1721E-02 | 8.2552E-01 | -8.6990E-02 |
| 2.0000E 00 | -5.9114E-01 | 5.1090E-01 | 7.8133E-01 | -7.1272E-01 |
| 2.4000E 00 | -3.2497E-01 | 6.8470E-01 | 7.5790E-01 | -1.1277E 00 |
| 3.0000E 00 | 1.2815E-01 | 7.1697E-01 | 7.2834E-01 | 1.3939E 00 |
| 3.4000E 00 | 3.9509E-01 | 5.9150E-01 | 7.1131E-01 | 9.8191E-01 |
| 4.0000E 00 | 6.4324E-01 | 2.4613E-01 | 6.8873E-01 | 3.6546E-01 |
| 4.4000E 00 | 6.7455E-01 | -3.0122E-02 | 6.7522E-01 | -4.4625E-02 |
| 5.0000E 00 | 5.1943E-01 | -4.0199E-01 | 6.5682E-01 | -6.5863E-01 |
| 6.0000E 00 | -6.8353E-02 | -6.2628E-01 | 6.3000E-01 | 1.4621E 00 |
| 7.0000E 00 | -5.4810E-01 | -2.6050E-01 | 6.0685E-01 | 4.4368E-01 |
| 8.0000E 00 | -4.9289E-01 | 3 1784E-01 | 5.8648E-01 | -5.7275E-01 |
| 9.0000E 00 | 9.5340E-03 | 5.6821E-01 | 5.6829E-01 | 1.5540E 00 |
| 1.0000E 01 | 4.7320E-01 | 2.8400E-01 | 5.5188E-01 | 5.4054E-01 |
| 1.3000E 01 | -4.0711E-01 | -3.0817E-01 | 5.1059E-01 | 6.4794E-01 |
| 1.5000E 01 | -9.6884E-02 | 4.7823E-01 | 4.8794E-01 | -1.3709E 00 |
| 1.8000E 01 | 1.4334E-01 | -4.3618E-01 | 4.5913E-01 | -1.2533E 00 |
| 2.0000E 01 | -4.3909E-01 | 5.5369E-02 | 4.4257E-01 | -1.2544E-01 |
| 2.3000E 01 | 4.2077E-01 | -7.7185E-04 | 4.2077E-01 | -1.8344E-03 |
| 2.5000E 01 | -1.7433E-01 | -3.6877E-01 | 4.0790E-01 | 1.1292E 00 |
| 2.8000E 01 | 1.2068E-01 | 3.7150E-01 | 3.9061E-01 | 1.2567E 00 |
| 3.0000E 01 | 2.7775E-01 | -2.5963E-01 | 3.8020E-01 | -7.5170E-01 |
| 3.3000E 01 | -2.9758E-01 | 2.1311E-01 | 3.6602E-01 | -6.2147E-01 |
| 3.5000E 01 | 3.1133E-01 | 1.7548E-01 | 3.5738E-01 | 5.1327E-01 |
| 4.0000E 01 | -7.0678E-02 | 3.3067E-01 | 3.3814E-01 | -1.3602E 00 |
| 4.5000E 01 | -3.2034E-01 | 2.8822E-02 | 3.2163E-01 | -8.9732E-02 |
| 5.0000E 01 | -1.1630E-01 | -2.8440E-01 | 3.0726E-01 | 1.1826E 00 |

## CASE III

$\phi = 210^{\circ}$ $\psi = 210^{\circ}$

| X | RE(HZ) | IM(HZ) | HZ(AMP) | PHASE(HZ) |
|---|---|---|---|---|
| 10.0000E-03 | 8.5272E-01 | -1.8740E-02 | 8.5293E-01 | -2.1973E-02 |
| 2.0000E-02 | 8.4892E-01 | -3.3863E-02 | 8.4960E-01 | -3.9868E-02 |
| 4.0000E-02 | 8.4153E-01 | -6.1059E-02 | 8.4374E-01 | -7.2431E-02 |
| 6.0000E-02 | 8.3407E-01 | -8.6047E-02 | 8.3850E-01 | -1.0280E-01 |
| 1.0000E-01 | 8.1850E-01 | -1.3212E-01 | 8.2909E-01 | -1.6003E-01 |
| 2.0000E-01 | 7.7478E-01 | -2.3359E-01 | 8.0923E-01 | -2.9283E-01 |
| 3.0000E-01 | 7.2421E-01 | -3.2177E-01 | 7.9247E-01 | -4.1811E-01 |
| 4.0000E-01 | 6.6740E-01 | -3.9928E-01 | 7.7771E-01 | -5.3914E-01 |
| 5.0000E-01 | 6.0513E-01 | -4.6706E-01 | 7.6441E-01 | -6.5733E-01 |
| 6.0000E-01 | 5.3823E-01 | -5.2553E-01 | 7.5225E-01 | -7.7346E-01 |
| 7.0000E-01 | 4.6756E-01 | -5.7488E-01 | 7.4101E-01 | -8.8799E-01 |
| 8.0000E-01 | 3.9395E-01 | -6.1522E-01 | 7.3054E-01 | -1.0012E 00 |
| 9.0000E-01 | 3.1825E-01 | -6.4666E-01 | 7.2073E-01 | -1.1135E 00 |
| 1.0000E 00 | 2.4130E-01 | -6.6931E-01 | 7.1148E-01 | -1.2248E 00 |
| 1.4000E 00 | -6.2842E-02 | -6.7607E-01 | 6.7899E-01 | 1.4781E 00 |
| 2.0000E 00 | -4.3020E-01 | -4.7336E-01 | 6.3964E-01 | 8.3312E-01 |
| 2.4000E 00 | -5.6680E-01 | -2.4548E-01 | 6.1767E-01 | 4.0871E-01 |
| 3.0000E 00 | -5.7471E-01 | 1.2990E-01 | 5.8921E-01 | -2.2229E-01 |
| 3.4000E 00 | -4.5920E-01 | 3.4199E-01 | 5.7255E-01 | -6.4013E-01 |
| 4.0000E 00 | -1.6635E-01 | 5.2452E-01 | 5.5027E-01 | -1.2637E 00 |
| 4.4000E 00 | 5.7267E-02 | 5.3383E-01 | 5.3689E-01 | 1.4639E 00 |
| 5.0000E 00 | 3.4422E-01 | 3 8795E-01 | 5.1865E-01 | 8.4506E-01 |
| 6.0000E 00 | 4.8401E-01 | -8.9060E-02 | 4.9213E-01 | -1.8197E-01 |
| 7.0000E 00 | 1.6800E-01 | -4.3831E-01 | 4.6940E-01 | -1.2048E 00 |
| 8.0000E 00 | -2.7335E-01 | -3.5693E-01 | 4.4958E-01 | 9.1723E-01 |
| 9.0000E 00 | -4.2992E-01 | 4.3069E-02 | 4.3207E-01 | -9.9848E-02 |
| 1.0000E 01 | -1.8335E-01 | 3.7390E-01 | 4.1644E-01 | -1.1149E 00 |
| 1.3000E 01 | 2.0118E-01 | -3.1995E-01 | 3.7795E-01 | -1.0095E 00 |
| 1.5000E 01 | -3.5510E-01 | -4.0421E-02 | 3.5740E-01 | 1.1334E-01 |
| 1.8000E 01 | 3.2296E-01 | 7.6387E-02 | 3.3187E-01 | 2.3225E-01 |
| 2.0000E 01 | -6.5990E-02 | -3.1059E-01 | 3.1752E-01 | 1 3614E 00 |
| 2.3000E 01 | 2.4899E-02 | 2.9797E-01 | 2.9901E-01 | 1.4874E 00 |
| 2.5000E 01 | 2.4997E-01 | -1.4359E-01 | 2.8828E-01 | -5.2140E-01 |
| 2.8000E 01 | -2.5338E-01 | 1.0451E-01 | 2.7408E-01 | -3.9119E-01 |
| 3.0000E 01 | 1.9551E-01 | 1.7989E-01 | 2.6568E-01 | 7.4381E-01 |
| 3.3000E 01 | -1.6271E-01 | -1.9552E-01 | 2.5436E-01 | 8.7673E-01 |
| 3.5000E 01 | -1.0599E-01 | 2.2372E-01 | 2.4756E-01 | -1.1284E 00 |
| 4.0000E 01 | -2.3022E-01 | -3.3371E-02 | 2.3262E-01 | 1.4395E-01 |
| 4.5000E 01 | -3.3416E-02 | -2.1750E-01 | 2.2005E-01 | 1.4183E 00 |
| 5.0000E 01 | 1.8869E-01 | -9.0519E-02 | 2.0928E-01 | -4.4730E-01 |

CASE III

$\phi = 210^{\circ}$ $\psi = 210^{\circ}$

| X | RE(EO) | IM(EO) | EO(AMP) | PHASE(EO) |
|---|---|---|---|---|
| 10.0000E-03 | -3.9112E-01 | -1.6015E 00 | 1.6486E 00 | 1.3313E 00 |
| 2.0000E-02 | -3.7284E-01 | -1.4433E 00 | 1.4906E 00 | 1.3180E 00 |
| 4.0000E-02 | -3.6953E-01 | -1.2946E 00 | 1.3463E 00 | 1.2928E 00 |
| 6.0000E-02 | -3.7750E-01 | -1.2099E 00 | 1 2674E 00 | 1.2684E 00 |
| 1.0000E-01 | -4.0219E-01 | -1.1021E 00 | 1.1732E 00 | 1.2209E 00 |
| 2.0000E-01 | -4.7217E-01 | -9.4117E-01 | 1.0530E 00 | 1.1058E 00 |
| 3.0000E-01 | -5.3818E-01 | -8.2607E-01 | 9.8591E-01 | 9.9337E-01 |
| 4.0000E-01 | -5.9677E-01 | -7.2551E-01 | 9.3941E-01 | 8.8246E-01 |
| 5.0000E-01 | -6.4721E-01 | -6.3084E-01 | 9.0380E-01 | 7.7259E-01 |
| 6.0000E-01 | -6.8927E-01 | -5.3885E-01 | 8.7490E-01 | 6.6352E-01 |
| 7.0000E-01 | -7.2286E-01 | -4.4827E-01 | 8.5057E-01 | 5.5509E-01 |
| 8.0000E-01 | -7.4795E-01 | -3.5871E-01 | 8.2953E-01 | 4.4719E-01 |
| 9.0000E-01 | -7.6462E-01 | -2.7025E-01 | 8.1097E-01 | 3.3974E-01 |
| 1.0000E 00 | -7.7296E-01 | -1.8317E-01 | 7.9437E-01 | 2.3269E-01 |
| 1.4000E 00 | -7.2747E-01 | 1.4174E-01 | 7.4115E-01 | -1.9242E-01 |
| 2.0000E 00 | -4.6506E-01 | 5.0182E-01 | 6.8419E-01 | -8.2340E-01 |
| 2.4000E 00 | -2.1209E-01 | 6.1948E-01 | 6.5478E-01 | -1.2409E 00 |
| 3.0000E 00 | 1.7867E-01 | 5.9215E-01 | 6.1852E-01 | 1.2778E 00 |
| 3.4000E 00 | 3.8826E-01 | 4.5490E-01 | 5.9807E-01 | 8.6427E-01 |
| 4.0000E 00 | 5.5420E-01 | 1.3925E-01 | 5.7143E-01 | 2.4616E-01 |
| 4.4000E 00 | 5.4825E-01 | -9.1139E-02 | 5.5577E-01 | -1.6473E-01 |
| 5.0000E 00 | 3.8033E-01 | -3.7595E-01 | 5.3478E-01 | -7.7960E-01 |
| 6.0000E 00 | -1.1531E-01 | -4.9154E-01 | 5.0489E-01 | 1.3404E 00 |
| 7.0000E 00 | -4.5511E-01 | -1.5178E-01 | 4.7975E-01 | 3.2190E-01 |
| 8.0000E 00 | -3.5214E-01 | 2.9309E-01 | 4.5815E-01 | -6.9414E-01 |
| 9.0000E 00 | 6.0184E-02 | 4.3514E-01 | 4.3929E-01 | 1.4334E 00 |
| 1.0000E 01 | 3.8572E-01 | 1.7265E-01 | 4.2259E-01 | 4.2086E-01 |
| 1.3000E 01 | -3.2918E-01 | -1.9381E-01 | 3.8200E-01 | 5.3212E-01 |
| 1.5000E 01 | -3.1349E-02 | 3.5921E-01 | 3.6058E-01 | -1 4837E 00 |
| 1.8000E 01 | 6.9453E-02 | -3.2688E-01 | 3.3417E-01 | -1.3614E 00 |
| 2.0000E 01 | -3.1098E-01 | 7.2955E-02 | 3.1942E-01 | -2.3043E-01 |
| 2.3000E 01 | 2.9890E-01 | -3.0655E-02 | 3.0047E-01 | -1.0220E-01 |
| 2.5000E 01 | -1.4860E-01 | -2.4847E-01 | 2.8951E-01 | 1.0318E 00 |
| 2.8000E 01 | 1.0894E-01 | 2.5258E-01 | 2.7507E-01 | 1.1636E 00 |
| 3.0000E 01 | 1.7749E-01 | -1.9884E-01 | 2.6654E-01 | -8.4206E-01 |
| 3.3000E 01 | -1.9378E-01 | 1.6586E-01 | 2.5507E-01 | -7.0794E-01 |
| 3.5000E 01 | 2.2566E-01 | 1.0329E-01 | 2.4818E-01 | 4.2925E-01 |
| 4.0000E 01 | -3.0735E-02 | 2.3106E-01 | 2.3309E-01 | -1.4386E 00 |
| 4.5000E 01 | -2.1749E-01 | 3.5761E-02 | 2.2041E-01 | -1.6297E-01 |
| 5.0000E 01 | -9.2444E-02 | -1.8807E-01 | 2.0957E-01 | 1.1139E 00 |



GPO 837-446

# THE NATIONAL BUREAU OF STANDARDS

The scope of activities of the National Bureau of Standards at its major laboratories in Washington, D.C., and Boulder, Colorado, is suggested in the following listing of the divisions and sections engaged in technical work. In general, each section carries out specialized research, development, and engineering in the field indicated by its title. A brief description of the activities, and of the resultant publications, appears on the inside of the front cover.

## WASHINGTON, D. C.

**Electricity.** Resistance and Reactance. Electrochemistry. Electrical Instruments. Magnetic Measurements. Dielectrics. High Voltage. Absolute Electrical Measurements.

**Metrology.** Photometry and Colorimetry. Refractometry. Photographic Research. Length. Engineering Metrology. Mass and Volume.

**Heat.** Temperature Physics. Heat Measurements. Cryogenic Physics. Equation of State. Statistical Physics.

**Radiation Physics.** X-ray. Radioactivity. Radiation Theory. High Energy Radiation. Radiological Equipment. Nucleonic Instrumentation. Neutron Physics.

**Analytical and Inorganic Chemistry.** Pure Substances. Spectrochemistry. Solution Chemistry. Standard Reference Materials. Applied Analytical Research. Crystal Chemistry.

**Mechanics.** Sound. Pressure and Vacuum. Fluid Mechanics. Engineering Mechanics. Rheology. Combustion Controls.

**Polymers.** Macromolecules: Synthesis and Structure. Polymer Chemistry. Polymer Physics. Polymer Characterization. Polymer Evaluation and Testing. Applied Polymer Standards and Research. Dental Research.

**Metallurgy.** Engineering Metallurgy. Metal Reactions. Metal Physics. Electrolysis and Metal Deposition.

**Inorganic Solids.** Engineering Ceramics. Glass. Solid State Chemistry. Crystal Growth. Physical Properties. Crystallography.

**Building Research.** Structural Engineering. Fire Research. Mechanical Systems. Organic Building Materials. Codes and Safety Standards. Heat Transfer. Inorganic Building Materials. Metallic Building Materials.

**Applied Mathematics.** Numerical Analysis. Computation. Statistical Engineering. Mathematical Physics. Operations Research.

**Data Processing Systems.** Components and Techniques. Computer Technology. Measurements Automation. Engineering Applications. Systems Analysis.

**Atomic Physics.** Spectroscopy. Infrared Spectroscopy. Far Ultraviolet Physics. Solid State Physics. Electron Physics. Atomic Physics. Plasma Spectroscopy.

**Instrumentation.** Engineering Electronics. Electron Devices. Electronic Instrumentation. Mechanical Instruments. Basic Instrumentation.

**Physical Chemistry.** Thermochemistry. Surface Chemistry. Organic Chemistry. Molecular Spectroscopy. Elementary Processes. Mass Spectrometry. Photochemistry and Radiation Chemistry.

**Office of Weights and Measures.**

## BOULDER, COLO.

### CRYOGENIC ENGINEERING LABORATORY

Cryogenic Processes. Cryogenic Properties of Solids. Cryogenic Technical Services. Properties of Cryogenic Fluids.

### CENTRAL RADIO PROPAGATION LABORATORY

**Ionosphere Research and Propagation.** Low Frequency and Very Low Frequency Research. Ionosphere Research. Prediction Services. Sun-Earth Relationships. Field Engineering. Radio Warning Services. Vertical Soundings Research.

**Tropospheric and Space Telecommunications.** Data Reduction Instrumentation. Radio Noise. Tropospheric Measurements. Tropospheric Analysis. Spectrum Utilization Research. Radio-Meteorology. Lower Atmosphere Physics.

**Radio Systems.** Applied Electromagnetic Theory. High Frequency and Very High Frequency Research. Frequency Utilization. Modulation Research. Antenna Research. Radiodetermination.

**Upper Atmosphere and Space Physics.** Upper Atmosphere and Plasma Physics. High Latitude Ionosphere Physics. Ionosphere and Exosphere Scatter. Airglow and Aurora. Ionospheric Radio Astronomy.

### RADIO STANDARDS LABORATORY

**Radio Standards Physics.** Frequency and Time Disseminations. Radio and Microwave Materials. Atomic Frequency and Time-Interval Standards. Radio Plasma. Microwave Physics.

**Radio Standards Engineering.** High Frequency Electrical Standards. High Frequency Calibration Services. High Frequency Impedance Standards. Microwave Calibration Services. Microwave Circuit Standards. Low Frequency Calibration Services.

**Joint Institute for Laboratory Astrophysics - NBS Group (Univ. of Colo.).**

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